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THE IRON AGE

New York, June 3, 1926

ESTABLISHED 1855 VOL. 117, No. 22

Teaching Foundry Practice

Plea for Cooperation Between Foundry Managers and the Schools—Survey of Subjects Proposed

BY C. EARNILL*

BY failure to encourage the college student to enter the foundry, an important human field is being neglected by foundry managers. Few engineers are thoroughly familiar with foundry work and few can speak intelligently of practical or technical foundry problems.

Foundry work does not appeal to the college graduate, because of the unpleasant surroundings which often there exist and because of the small compensation offered during the first few years. In other branches of work he usually can obtain cleaner work with greater compensation at the start and, therefore, overlooks the fact that, later, he will be one of too many in his chosen branch of work and meeting with keen competition.

For years the foundry has been looked upon as a necessary nuisance carried along with a machine plant. Too often it has been considered as a department requiring no skilled labor. Such ideas have created conditions which cause great losses. The present difficulty in securing skilled help is a result of these primitive ideas. A more technical control of the smaller foundries is necessary, that they may compete with the larger manufacturing companies equipped with modern laboratories.

Foundry Lags in Scientific Advance

IS it not true that the foundry is far behind other branches of industry in scientific improvement and advancement? There are numerous unsolved problems awaiting investigation and research in this field. As a delegate at the International Conference of Foundrymen, held in Paris in 1923, the writer had the opportunity to visit many large machine plants in England and France. The leading men in industry there have for years realized the value of having technically trained men in their foundries. To keep this supply sufficient they encourage young men to enter work of this nature.

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I noted with interest the manner in which such a well known man as Sir Robert Hadfield conducted us through the foundries of Hadfields, Ltd., Sheffield, England, and explained the entire operation in detail. How many executives of our great organizations can do the same thing?

It is surprising that so little attention is given, by the majority of our universities and colleges, to foundry instruction of engineering students. On June 30, 1925, there were 366 such institutions listed by recognized accrediting agencies throughout the United States. Out of these, to my knowledge, only 39 give instruction in foundry and pattern work. Many engineering students graduate from these institutions with only a general knowledge of foundry science, limited by the short period the student is required to spend in a shop course.

Practical Application Essential

IT is essential not to lose sight of the value of practical shop training for an engineering student. What would science mean to him if he did not know how to apply it? Is it not true that many graduates expect a "white-collar" job after they have spent four or five years in college? The number of students graduating each year would constitute a vast army of non-producers for our industry to support, if they were not taught that the way to success is through hard, practical work. Our institutions of learning should not be a breathing place for a mahogany armchair engineer, but a place where the student is taught to become a producer of high order.

The University of Illinois conducts its shop laboratories, including instruction in heat treatment, machine, pattern and foundry work, on a strictly manufacturing basis. A two-cylinder, marine type, gas engine is the standard product. The students conduct the work throughout the departments. They deal with those practical problems which occur in a manufacturing plant. Each mechanical engineering student spends 8 hr. a week in the foundry laboratory during the aca-

THAT the foundry is lagging in adoption of scientific methods—that close cooperation should exist between the foundry and those schools teaching the elements of foundry practice—that definite measures should be taken in lifting the foundry into line with other productive industries, in its appeal to men of college caliber, so that their continuing efforts may have the natural effect of producing steady development of the foundry industry along technical lines.

These form the thesis of the article here presented.

demic year and performs manual as well as executive work.

Some leading electrical firms, cooperating with the technical institutions, are conducting conferences for engineering teachers during the summer. These firms appreciate the advantage of being in close contact with the schools and realize the importance of cooperation between schools and industry. Many firms employ engineering students during their vacations and the schools try to secure summer employment for their engineering students, so that they may gain some practical experience. Few foundries are cooperating with the schools to this effect.

To Make Technical Foundrymen

WE cannot expect to get expert foundrymen from any college or university, but we can direct technically trained men into the foundry and make foundrymen of them. The problem of scientific and modern control of the foundry is a big problem. But if the technical institutions and the foundrymen realized the importance of having a sufficient supply of technically trained foundrymen on hand in the future, this problem would become of minor importance.

The American Foundrymen's Association has accomplished a great and important work by standardization in various branches within its field. The first attempt of having a "get-together" of instructors in foundry work was made last year at its Syracuse convention. The writer is looking forward to closer cooperation among foundry instructors through this yearly opportunity of meeting and discussing duties toward students and toward the foundry industry.

> *Would it not be possible for a committee of foundrymen and foundry instructors to cooperate with the institutions teaching this type of work and to formulate standardized instruction in it?*

The instruction should be of such a nature that the students would become trained in the more important features and thus absorb a sound fundamental knowledge of foundry work. Such a committee could undoubtedly have great influence on the instruction given in high schools where foundry work is given as a manual course. The instruction in the high schools could be arranged as a preliminary training to that given in the engineering schools. The majority of students taking foundry work in high schools will not follow this work through life. However, if this work is a part of their training, there seems no reason why standardized instruction should not be given.

In making out a schedule of standardized instruction it may be well to begin in the high schools. In preparing the form of standardization too much stress should not be put upon actual skilled labor, such as teaching the students to produce perfect molds. The schools cannot expect their students to compete with the skilled mechanic.

What Should Be Taught

TECHNICAL and administrative phases of the foundry should be taught, such as foundry chemistry, metallurgy, metallography, sand testing, scientific management, control of production, time study and dispatching. Actual skill cannot be obtained from any college or university course, but a student who graduates from a course in foundry work should have a fundamental knowledge sufficient to enable him, in a few years of practical work, to do more important work in the foundry.

A variation in the kind of instruction given in different parts of the country would be necessary. Instruction in an automobile center should be somewhat different from that given in a pipe manufacturing center. Standardized instruction can harm no student and, even if the majority of students do not receive direct benefit, the students who intend to follow the foundry business should profit from it. Likewise, the foundry business must be benefited.

Following is a list of foundry problems and phases which should be taken into consideration by a committee making up a form for a standardized course in foundry instruction:

1.—Molding sand testing;
2.—Chemical analysis of cast iron;
3.—Brinell hardness test;
4.—Scleroscopic hardness test;
5.—Transverse strength of cast iron test;
6.—Microscopic examination of cast iron;
7.—Study of the formation of crystals in cast iron;
8.—Making a standard test bar;
9.—Shatter coke test and standard method of analysis;
10.—Pyrometer reading and control of pouring temperatures;
11.—Recording thermometer in connection with control of core oven temperatures;
12.—Effects of the elements on each other and on cast iron;
13.—Changes taking place during melting in a cupola;
14.—Making up mixtures by analysis;
15.—Changing the mixture in the cupola during its operation;
16.—Mixing non-ferrous metals;
17.—Study of the non-ferrous elements, their effect on each other and on the mixture;
18.—The effect on the non-ferrous metals by addition of Cu Sn, Zn, Pb, Ni and Al;
19.—Calculating the capacity of large ladles;
20.—Estimate weight of castings from blue prints;
21.—Calculate the ferrostatic pressure;
22.—The technic of risers and gating;
23.—Defective castings, causes and remedies;
24.—Fluxes for ferrous and non-ferrous metals;
25.—Safety inforcements, necessity of goggles, molders' shoes, leggings and safety bulletins;
26.—Principles of foundry management and operation;
27.—Time study and dispatching;
28.—Making up core sand mixtures;
29.—Various kinds of core binders and their usage;
30.—A study of time required for baking cores;
31.—The construction of a core oven;
32.—Blast furnace operation;
33.—Air furnace operation;
34.—Non-ferrous furnace operation;
35.—Bessemer converter operation;
36.—Cupola operation;
37.—Electric furnace operation;
38.—Lectures on the various types of foundries and the difference in the operation of a steel, gray iron, brass, aluminum and malleable foundry.

These are but suggestive of the many problems that a foundry executive is dealing with every day, and it seems that problems of this kind should be taught to engineering students.

Undoubtedly, it will be impossible to cover all of this in the short period of time the average student spends in a foundry course. However, if a committee could arrange to cooperate with the high schools and preparatory schools, much elementary work could be covered before the student enters college or university. More time then could be devoted to the higher studies during his college training.

It is surprising that a number of foundry courses are given under the supervision of departments such as chemistry or electrical engineering. It would seem far more satisfactory if these courses were given in connection with the mechanical engineering department, where other shop courses generally are given.

The importance of teaching a course that is up to date and true to modern manufacturing conditions should be the aim of our schools. That, of course, would mean that obsolete equipment, now most extensively used, should be condemned and modern machinery installed in its place. It is not possible to instruct engineering students in up-to-date methods through the use of old and obsolete equipment.

United States exports of agricultural implements amounted in April to $8,572,687, according to figures of the Department of Commerce. This was an increase of more than 7 per cent above the $7,939,597 of March and of more than 9 per cent above the $7,845,474 of April last year.

Mill Competition Hurts Jobbers

Steel Warehouse Men at Atlantic City Convention Decide to Formulate Code of Practice to Remedy Situation

MILL competition for the smaller orders which steel jobbers consider to be legitimate warehouse business was held responsible, in part at least, for present unsatisfactory conditions in the distribution of steel products out of stock, when members of the American Iron, Steel and Heavy Hardware Association discussed the subject at their annual meeting on May 24, 25 and 26, at Atlantic City, N. J.

The topic came up again and again in various reports and discussions. It was emphasized in the following statement by Andrew Wheeler, president of Morris Wheeler & Co., Philadelphia, chairman of the association's iron and steel committee:

"Many of the heavier or more desirable warehouse orders have been taken by the mills—that is, for direct shipment to customers. So much so, that in frequent cases, customers who were formerly warehouse buyers have learned that they can obtain their requirements for moderate sized lots from the mills at the regular mill price. This has had a most unfortunate effect on steel warehousing, and it is hoped that something may be worked out with the manufacturers so that orders of 1 to 5 tons, or even less than carload lots, should find their way through some warehouse instead of going direct to the mills at the regular carload price, which has been the case for some time past."

It was also stated by Mr. Wheeler that his committee has held conferences with many of the steel companies with a view to working out a line of demarcation between proper mill business and proper warehouse business. One of the larger steel companies, he said, has made, as a result of conferences with the committee, an exhaustive study of the cost of handling small orders by the mill. Mr. Wheeler said that ideal conditions prevail in the pipe trade, where the mills confine their sales to large consumers and all other orders are filled from jobbers' stocks. Mr. Wheeler admitted that jobbers have sometimes reached out for what are properly mill orders, but said that this is not done to the extent that mills reach out for small orders that he believed should go to a warehouse.

Other points stressed by the speaker as having made competition more difficult for the steel warehouse are price cutting by "small, irresponsible competitors" and importations of steel at prices below costs of domestic steel. Increasing demand for bars and other products cut to special lengths instead of regular stock lengths was commented upon.

Association to Formulate Code of Practice

A sub-committee on relations with the structural industry brought in a report recommending that the association adopt a code of practice, and after considerable discussion this committee was continued in office and authorized to draft such a code to be presented to the next convention.

T. J. Foster, chairman of the board, National Bridge Works, Long Island City, N. Y., who is chairman of this committee, said in his report that the policy of some mills of supplying anyone from mill stocks at the regular or about the regular mill price "cannot logically be defended." He said that unless the mill charges a sufficient price for all material delivered from mill warehouse "it is cheating its stockholders as well as giving away something to one customer to the detriment of its warehouse customers." The best method, he said, would be for the mill to take no small orders, but to know that it received its proportionate share of the business of the warehouses.

"In addition to teaching consumers to carry their own stock, the mills have opened some warehouses of their own," said Mr. Foster. "The independent warehouse must therefore sell at the same price as the mill warehouse. * * * * As both the warehouse and the mill have been undergoing changing conditions, it is only natural that bad practices should have grown up, and it is impossible for one warehouse or one mill to put an end to bad practices; it must be done in concert, and it must be apparent to anyone who has the slightest acquaintance with the business that a study of the conditions would reveal that both the warehouses and the mills are guilty of practices that are injurious to the industry. If this is true, then these practices should be studied and an attempt made to eliminate them.

The method of doing business as might be outlined by a committee appointed to make this study would be a code of practice, and if this was reasonable, it should be recognized by all of the mills and all of the warehouses trying to do business in a way considered safe and wise by the majority. You have gone a long way toward rectifying abuses if you can segregate them and point to the companies permitting abuses.

Outstanding Features of Meeting of Steel Warehouse Men

American Iron, Steel and Heavy Hardware Association decides to formulate Code of Practice as a means of establishing line of demarcation between proper mill business and proper warehouse business; also as a means to "get its own house in order."

Sherman law assailed by speaker as an "economic absurdity" and suggestion is made that agreements between producers and consumers should be permitted.

Recent series of articles on steel frame houses published in THE IRON AGE commented upon, and steel jobbers are told this is a profitable field for development.

Bolt and nut industry reported as showing improvement and price stability. Some railroads have been induced to give up making their own bolts and nuts.

Market prophecies held by president of the association to be "pointless and mere guesses."

At present there is no standard by which any man's method may be gaged."

Conditions in Cold Finished Steel Trade

Some makers of cold finished steel bars and shafting are competing seriously with the warehouses for small-lot orders, according to a report submitted by the chairman of the cold finished steel committee, A. J. Lockwood, of Edgar T. Ward's Sons Co., Newark, N. J. Mr. Lockwood said that more cold finished steel can be made with existing facilities than can be sold. The mills do not want small orders, he said, but are obliged to take them. He suggested that an effort be made to induce the mills to charge an extra for small quantities, such as $5 a ton up to 10,000 lb. and $2 a ton from 10,000 to 24,000 lb.

Bolts, nuts and rivets are also particularly subject to strong mill competition, said W. E. Hansen, Hansen & York Co., New York, chairman of the bolt and nut committee. One company was singled out as having been particularly aggressive in this particular, although it was said that others also are taking small orders at prices below those at which warehouses can profitably sell. Mr. Hansen mentioned an export order for bolts, amounting only to $18, which his firm lost to a manufacturer because of a lower net price.

In a discussion of this subject it was pointed out that the twist drill manufacturers, against whom complaints had at one time been registered, had "cleaned house" and that the method of quoting prices they have adopted, if followed by manufacturers in other lines, would afford a solution of much of the competition from manufacturers that the jobbers now contend with. The twist drill manufacturers, it was explained, have a schedule of discounts divided into four classifications, A, B, C and D. Distributers come under the A classification, which gives the highest discounts, while large consumers get the B discounts and the C and D schedules are for smaller consumers, rated according to the volume of their purchases.

G. K. Conant, St. Louis, Elected President

The association elected as its new president, G. K. Conant, Sligo Iron Store Co., St. Louis, who succeeds G. M. Congdon, Congdon & Carpenter Co., Providence, R. I. E. McK. Froment, of Froment & Co., New York, was elected first vice-president, and H. A. Sadler, Sioux City Iron Co., Sioux City, Iowa, became second vice-president.

The executive committee, as elected, consists of C. C. Dodge, George F. Blake, Jr., & Co., Worcester, Mass.; A. J. Lockwood, Edgar T. Ward's Sons Co., Newark, N. J.; F. J. McNeive, W. F. Potts Sons Co., Philadelphia; A. J. Bragg, Egleston Brothers & Co., New York; L. C. Davenport, Weed & Co., Buffalo; R. H. Sanderson, E. P. Sanderson Co., Boston. A few months ago the executive committee of the association selected Benjamin R. Sackett as secretary, with T. James Fernley and George A. Fernley, Philadelphia, as advisory counsel.

A committee appointed at the Detroit convention a year ago to select a new name for the association recommended the American Steel Warehouse Association, and after considerable discussion this name was adopted by a large majority, but the action later was rescinded in order to give all of the members a chance to vote. The secretary was instructed to take a referendum by mail.

Market Prophecies Pointless, Says President

President Congdon, in his opening address, discussed business conditions, but refrained from making any prophecies, saying that such prognostications are "pointless and merely guesses." In this connection, he added:

"I remember going to a luncheon in New York two or three years ago where addresses were delivered by the president of one of our large steel companies and by one of the editors of THE IRON AGE. One of these gentlemen stated it as his firm conviction that steel would be selling at $4 to $5 a ton more than the then going price within three months and that the industry was in for a period of very marked prosperity. The other gentleman took exception to this prophecy and gave his reasons for differing. What happened?

The steel companies all announced raises in prices to take effect the following quarter. Everyone jumped into the market and bought more steel than they could use; they couldn't take up their contracts, the mills lost the short-lived backlog of orders that had been built up, and the market sagged off until within a comparatively short time we were way below the point at which the boom started.

A very similar condition arose in the market a year ago last winter. We were all told that steel bars would cost us 2.10c. in the second quarter; many companies bought beyond their requirements, history repeated itself, and before many months had elapsed the market was weak at 1.90c. By the first of this year it had gradually worked itself back to 2c., where it remained during the whole first quarter.

"Personally I am glad the mills refrained this year from making their annual 'ballyhoo' about higher prices. The country was in no mood to pay higher prices; the mills evidently sensed that fact and decided to let well enough alone. Of course the whole thing in a nutshell is that we have a material over-capacity of steel production, so that when the mills are producing anywhere near 100 per cent they are making an amount of steel far in excess of the demand. It seems to me that this is being generally recognized now and the effect is salutary."

Steel for Dwellings Discussed

T. J. Foster, National Bridge Works, pointed out to the members the opportunity open to them to act as distributers for steel frames for residence construction.

"Is there a demand for better buildings," he asked, "and, if so, how does it interest the steel warehouse? THE IRON AGE realized that there was a demand, made an investigation of the subject, and recently printed five articles on the better building of residences." This type of construction, Mr. Foster pointed out, needs a warehouse in each community. "We are in the infancy of a new type of building using non-combustible materials," he added, "and someone must furnish the experts for designing and furnishing the materials of construction. You (owners of steel warehouses) should occupy this field. It is worth investigating."

Sherman Law Assailed

"There isn't an economist in the world who doubts the stupidity of the Sherman law," said Felix H. Levy, former counsel to the Department of Justice, in an address on "Competition and Cooperation." Mr. Levy advocated an amendment to the Sherman law permitting agreements between producers and consumers as to prices. He pointed to the insufficiency of profits in many lines of industry, and said that members of a group of distributers who pleaded guilty to an agreement as to prices in violation of the anti-trust laws could show profits of only 2 per cent on invested capital.

Major A. E. Foote of the Division of Simplified Practice, Department of Commerce, illustrated by a series of lantern slides the work which that bureau has done. J. J. Hill, Jr., Edgar T. Ward's Sons Co., Newark, N. J., told how his company cuts down the overhead in the accounting department. W. E. Bittenbender, Bittenbender Co., Scranton, Pa., showed by means of figures how profits often decrease as volume increases. I. L. Jennings, secretary and general manager Lamsen & Sessions Co., Cleveland, bolt and nut manufacturer, reported improving conditions in that industry. Price stability, he said, has been maintained for more than a year and the demand is increasing. Some of the railroads have been shown, Mr. Jennings said, that they can buy bolts and nuts cheaper than they can make them, and three or four have already discontinued the making of their own bolts and nuts. G. A. O'Rielly, Irving Bank, Columbia Trust Co., New York, delivered a talk entitled "The Trend of the Times."

The report of the secretary, Benjamin R. Sackett, dealt in detail with the work of the association office during the past year.

NEW ACID-RESISTING ALLOY

Pioneer Metal Contains Nickel Chromium, Molybdenum and Iron

Interesting development work in the production of an acid-resisting ferrous alloy containing nickel, chromium and molybdenum has been conducted by the Pioneer Alloy Products Co., Inc., Cleveland. The Pioneer company controls patents on the metal, which, it is stated, will resist practically all corrosive liquids used in the chemical industry, except possibly hydrochloric acid. It has been introduced, for example, as the material of valves, cocks, pump parts and pipe fittings in the petroleum and chemical industries.

The alloy is composed of approximately 35 per cent nickel, 25 per cent chromium and up to 5 per cent molybdenum. The remainder is practically all iron from Armco iron crop ends from 4 x 4-in. slabs, used because of purity and low-carbon content. Zirconium ferrosilicon to the amount of approximately ½ per cent is added as a deoxidizer. The zirconium fluxes off and the silicon stays in the metal. The carbon content of the alloy ranges usually from 0.20 to 0.30 per cent, although occasionally it is desirable to run it up to 0.50 per cent. The alloy has a tensile strength of 74,000 lb. per sq. in. in the cast condition. In forgings it shows a tensile strength of 110,000 lb.

Pioneer metal is produced in a 500-lb., 3-phase basic lined electric furnace of the Moore type, built by the Pittsburgh Electric Furnace Corporation. The iron and nickel are first charged in the furnace, the former directly under the electrodes and the nickel on the outside, and as the iron melts the nickel comes into the bath. After the iron and nickel are fused, the other metals are added. Starting with a cold furnace it takes 4 hr. to bring the metal up to 3000 deg. Fahr., at which temperature it is taken from the furnace. After about 75 per cent of the metal is drawn off, a new charge is put in consisting of gates and sprues and as much new metal as may be required to fill the furnace to capacity. By following the practice of pouring only 75 per cent of the heat, there is always molten metal under the electrodes to keep the contact between the metal and the electrodes. After the first heat in the morning, another heat is taken off every 2 hr. All the metal is taken from the furnace when the last heat is poured at night. The metal is poured in 100 to 150-lb. ladles at a temperature of 2900 deg. It cools very rapidly and consequently has to be poured quickly.

Various difficulties were encountered in casting this metal, but these are said to have been overcome. At first magnesite sand was used for the molds, providing a basic mold so that there would be no chemical or other reaction, but the production cost of castings was found to be too high to be practical and silica sand molds were substituted. The molds are baked from 6 to 14 hr., depending on their size, to take out the moisture, in a special oil-fired oven of the coke oven type. Large risers are required for heavy castings. In casting ingots, 55 per cent of the metal goes into the mold and the remaining 45 per cent forms the head containing the impurities and pipe. Chills have been used in making castings from this metal, but with varying success because, if they are used, the metal has to be poured while the molds are still warm. If the molds are left on the floor for any length of time they absorb moisture, causing the metal to blow when pouring, if chills are used. If chills are to remain in the castings, they have to be of the same metal. Other metal has been used for chills, but it has been found that, if the chills are of any size, they do not adhere to the molten metal. The shrinkage of the metal is about ¼-in. per ft. or practically the same as in cast steel.

Announces an International Conference on Coal

An international conference on coal will be held at the Carnegie Institute of Technology in Pittsburgh the end of November, 1926, according to an announcement of plans now being devised by Dr. Thomas S. Baker, president of the institution. The fundamental idea of the meeting, it is announced, is the discussion of new uses of bituminous coal.

Several prominent scientists of Germany, France and England have been, or will be invited to participate in the discussions.

Some of the topics that are now receiving consideration for discussion during the conference are the low temperature carbonization of coal, generation of power at the mines, domestic use of coke, and water power vs. coal energy.

Abandoning Paxton Furnaces

Dismantling of the two Paxton furnaces of the Central Iron & Steel Co., Harrisburg, Pa., was decided on recently and is now under way. No. 1 furnace was built in 1855 and rebuilt in 1886. No. 2 furnace was built in 1872, remodeled in 1917 and relined in 1919.

Hailed as Dawn of a New Era in Transportation

NEW 100-ton oil-electric locomotive on the Long Island Railroad. This self-contained power unit is so easy to operate that a steam or electric driver can learn to manipulate it within a few hours. Its internal combustion engine, using low-priced fuel oil, drives an electric generator furnishing power to motors geared to the driving wheel axles. Hauling a loaded freight train 537 miles, without taking on additional fuel or water, the total cost of fuel and lubricating oil was $26.15.

Evolution in American Industry

Great Growth in Machine Power, Drift to Large Corporations, Rise of Industrial Management, Increase of Per Capita Output, and High Buying Power of Workers

BY MAGNUS W. ALEXANDER*

WHAT are the more significant recent changes in the economic environment of industry? Let us look first at population. The population of the world in 1800 was 850,000,000. In 1900 it was twice as large. It took ages to produce the first 850,000,000 persons, but only 100 years to double that number. In the 24 years after 1900 it increased another 153,000,000.

In the United States alone, population has been increasing at a rapid rate. In 1870 it was 39,000,000; but 30 years later it had almost doubled, reaching 76,000,000. Since 1900 the increase has been even more rapid, and for Jan. 1, 1926, the population was estimated as 115,940,000, an increase of over 10¼ millions since 1920 and of about 40 millions since 1900.

Reduced Labor Supply, Increased Power

Between 1820 and 1920 over 33,000,000 immigrants came into this country, and in 1920 of every 100 persons in the United States 35 were foreign born or of foreign parentage. The limitation of immigration, of course, will do much to curtail the rate of increase.

With the damming of the immigrant tide a new and even more striking factor affecting industry has appeared. This has been the increased use of power, to offset the restriction of labor supply without diminishing production. In 1869, the first year for which power statistics were collected in the United States, the number of horse power available per wage earner in factory, hand and neighborhood industries was 1.14. By 1919 it had increased to 3.26 hp. In 1923 the figure was 3.77 hp. per wage earner and by this time bids fair to be about 4 hp.

Production Rate Much Greater, Hours Less

During the World War and particularly since its termination, the industries of the United States have gone ahead in introducing machinery, power and efficient methods at a high rate, so that if we compare the year 1914 with the year 1923 we find that for the same unit of production there were required in 1923 13 per cent less installed power, 25 per cent fewer wage earners and 17 per cent less management personnel than in 1914. For each wage earner, hours of work were 7 per cent lower in 1923 than in 1914. Improvements in organization and in technical processes, however, reflecting increased industrial efficiency and a greater amount of installed power placed behind each wage earner permitted a 33 per cent increase in production per wage earner, while at the same time there was an increase of 19 per cent in the cost of managerial supervision and a 36 per cent increase in the cost of labor.

Production Drift to Large Corporations

Another significant change in the economic environment of industry has been the marked development of large-scale production and corporately owned establishments. In 1904 1.3 per cent of the total number of manufacturing establishments in the United States were in the class whose value of product was $1,000,000 or over. This group employed 26 per cent of the total number of wage earners and contributed 38.5 per cent of the total value of manufactured products. By 1923, 5.3 per cent of the manufacturing establishments were in the class with a value of product of $1,000,000 or over per year, but the proportion of the total wage earners in manufacturing that they employed had mounted to 57.1 per cent and the total value of their product to 66.4 per cent. Manufacturing establishments whose value of product was under half a million dollars in the year 1923 comprised nearly 90 per cent of the total number, but employed less than 30 per cent of the wage earners and produced not quite 22.5 per cent of the total value of manufactures.

More Workers in Large Plants

A similar view of the development of large-scale production is afforded by an examination of establishments according to their size. In 1923 only 1.4 per cent of the total number of manufacturing establishments employed more than 500 persons each, but this 1.4 per cent of the total establishments employed 38.1 per cent of the total number of wage earners. If to this be added the number of plants employing from 251 to 500 wage earners each, we find that in the class of factories employing more than 251 workers are comprised 3.4 per cent of the total number of establishments, but 53.3 per cent of the total number of wage earners.

Closely intertwined with the growth of large-scale production, and no doubt a contributory factor in its development, is the increase in the influence of corporately owned establishments. In 1904, 23.6 per cent of the manufacturing establishments in the United States were corporately owned, and in 1919 the percentage was 31.5. But this 31.5 per cent of the manufacturing establishments produced 86.5 per cent of the total value of manufactured product.

Size Not a Menace

This development of large-scale production, and its influences in the number of persons dependent upon it for employment and in the share of the product which it contributes, is no less a significant factor in the changing economic environment of industry than the increasing population. But instead of the trend pointing toward a decline in the influence of the large plant, the outlook is rather for an increasing growth in this direction.

Size alone no longer strikes the American people as a menace and in the development of large-scale production has been the seed of a new force of industrial organization which is largely responsible for the gains that have been attained, and which is a further important factor in the changing environment of industry.

Manufacture and Mining Far Outrun Agriculture

Important also is the trend in production. If we look at the trend of population since the end of the last century and compare with it the three productive activities which employ the major part of our gainfully occupied population, we find that agriculture has not held its own with population growth. While the physical volume of agriculture has risen 39 per cent between 1919 and 1924, the physical volume of manufacturing production has risen 162 per cent and of mining production 222 per cent. In few periods of the history of mankind has man had so much to eat, so easily and so cheaply obtained as now. Agriculture, since the beginning of the century, has set the world a full table

*From president's address at the tenth anniversary meeting of the National Industrial Conference Board in New York, May 20.

at low prices. Its trend of development since 1919 has been downward, and its whole tendency since the beginning of the century has not been in line with other basic production. In this, and the reasons for this condition, lies much of the explanation of the present agricultural problem in the United States.

The greatly increased manufacturing and mining production is a further evidence of the growing drain of our industries on our natural resources, a situation which in itself calls for wise economic planning. Mining output per capita, measured in dollars of constant 1914 purchasing value, rose from $12.61 in 1899 to $26.96 in 1924, per capita manufacturing output from $77.34 to $134.28, whereas per capita agricultural output declined from $69.55 to $64.13.

This unequal balance between agriculture and other basic production has created a problem which is well deserving of the attention of industrial executives. Industry cannot for long exist on a prosperous basis with agriculture in the position in which it finds itself. Our agriculture exercises normally a purchasing power of 10 billion dollars annually for goods and services produced by others; it purchases about one-tenth of the value of manufactured goods produced; it supplies material upon which depend industries giving employment to over half of our industrial workers; it supplies about one-eighth of the total tonnage of freight carried by our railroads, about one-half of our exports, and pays about one-fifth of the total cost of government.

Marked Rise of Industrial Management

Then, there is a wholly new force in our industrial organization. This is the rise of industrial management as a dominant influence in the integration of industrial processes and the efficient operation of industry. The development of industrial management is a separate entity and may indeed be referred to as one of the silent revolutions within modern industry.

This development of management as a new force has brought with it a different attitude of mind and a new spirit. It has emphasized more than ever the responsibility of the employer to employees and the community. It has helped to do away with the deplorable class spirit, all too evident in the industry of the past, and to introduce a human as well as a more scientific attitude into industry.

Significant Changes in Exports and Imports

Our emergence as the leading manufacturing nation has given us a certain place in the world economic organization which in turn has affected our environment and reacted upon our industries and people. In the last few years we have been buying goods from other nations to the extent of about $3,755,000,000 a year and in turn have been selling them goods at an average of about $5,035,000,000 a year. An examination of the export trade shows a fairly steady decline in crude materials for manufacturing and of foodstuffs, and a corresponding increase in partly and wholly manufactured goods.

Our import trade has been characterized, on the other hand, by a steady increase in crude materials for manufacturing and a corresponding decline in manufactured articles. Thus, our exports of crude materials for manufacturing which averaged well over 60 per cent of all of our exports between 1820 and 1870 have averaged under 30 per cent since 1900, while semi-manufactured and other manufactured goods, which between 1820 and 1870 averaged under 15 per cent of the total, have since 1900 comprised about one-half of our total exports. Manufactured goods which from 1820 to 1870 constituted over two-thirds of our total imports have since 1900 averaged under 30 per cent, whereas our crude material imports which prior to 1870 averaged under 20 per cent of the total have since 1900 run at the rate of between 35 per cent and 40 per cent of the total.

Control Many Raw Materials, But Exceptions Are Important

Due to our fortunate position in natural resources our competitive position is especially strong. No other country is more nearly self-supporting in minerals and in no other country can the mineral raw materials be delivered as a whole more cheaply than in the United States. Yet, while we have within our boundaries 38 per cent of the installed water-power and produce 83 per cent of the world's automobiles, 38 per cent of its coal, 70 per cent of its petroleum, 54 per cent of its copper, 40 per cent of its lead, 46 per cent of its pig iron, 49 per cent of its steel ingots and castings, 57 per cent of its paper, 53 per cent of its lumber, 55 per cent of its cotton, 25 per cent of its wheat, and 30 per cent of its cereals other than wheat, we are as a nation dependent upon other nations for certain important raw materials or for products essential in the manufacture of goods in which we excel.

This dependence on other countries for certain essential materials in the face of attempts by certain of the foreign nations to control the supply and hence the price of these has resulted in a head-on collision between economics and politics and confronted certain of our industries with a most serious situation. If the right is accorded to any nation to monopolize either temporarily or permanently the output of a commodity which is dominantly produced within its boundaries, and on which other nations are dependent for their comfort and standard of living, then we must face a situation of economic warfare in which every nation must inevitably suffer and which can bring no satisfactory result to any.

The controls of Egyptian cotton, of coffee, rubber, potash, nitrates, and other commodities have very prop-

(*Concluded on page* 1625)

M. W. ALEXANDER

AS the directing head of the National Industrial Conference Board, Magnus W. Alexander has carried on a work of the highest consequence to the industries of this country in the trying readjustment period following the Armistice. On the organization of the conference board ten years ago, Mr. Alexander was made managing director. For several years past he has been president. Mr. Alexander studied engineering in Austrian universities and was engaged as engineer by the largest Austrian steel company. For many years he was associated with various electrical concerns in the United States as designer and engineer, his last connection being with the Lynn works of the General Electric Co. Some of his most productive effort was in the promotion of advanced methods of industrial education, which he urged most effectively in addresses before employers' associations and in magazine articles. He has written much on modern industrial and economic problems.

Machinery Exports Continue Heavy

April Shows Largest Movement Since Last August—First Four Months One-Fourth Above Last Year—Imports Also Large

WASHINGTON, June 1.—Making a gain of more than $3,500,000, exports of machinery in April were valued at $38,755,467, against $35,241,960, in March, and $33,468,086 in April, 1925. There was also a striking increase in exports during the 10 months ended with April, 1926, with a value of $335,139,521, compared with $268,291,559 in the corresponding period of last year. This gain was 25 per cent.

Exports of all power-driven metal-working machinery in April were valued at $1,479,337, against $1,297,616 in March. Exports of this equipment in April of the present year were slightly less in value than in April, 1925, when the value was $1,694,761. There was a large gain, however, during the 10 months ended April, 1926, when exports of this class of machinery were valued at $14,026,896, as against $11,777,165, for the corresponding period ended April, 1925. The increase was nearly 20 per cent. Exports of power-driven metal-working machinery listed in THE IRON AGE table numbered 1213 units, valued at $697,714, against 787 units, valued at $620,515, in March.

Imports of machinery in April were valued at $1,814,021, against $1,567,912 in March and $1,167,099 in April, 1925. Like the export movement, incoming shipments of machinery during the 10 months ended April, 1926, showed a large increase when compared with the corresponding period of one year ago, the respective values being $12,394,861 and $8,624,951. A gain of 44 per cent was thus recorded. The gains were made in all items listed, except electrical machinery and "other power-generating machinery."

Among outstanding gains made in exports during the 10 months ended April, 1926, were those for automobile engines. Shipments for the current period were valued at $11,363,991, against $8,505,670 for the corresponding period one year ago. Exports of typewriters continue to maintain a large volume. In April they were valued at $1,736,853, and for the 10 months ended April, 1926, at $15,722,922.

The United Kingdom was the largest importer of American typewriters, both in April and during the 10 months. For the single month the United Kingdom took 5904, valued at $323,475, while for the 10 months the number was 55,011, valued at $3,021,077. Exports of typewriters to France in April numbered 4627, valued at $228,907, while for the 10 months the number was 29,367, valued at $1,617,941. Italy took 1869 typewriters, valued at $108,636, and for the 10 months, 11,392, valued at $657,966. Brazil took 1176 typewriters, valued at $82,460, in April, and during the 10 months took 9020, valued at $586,428.

Exports of sewing machines in April were valued at $991,034, and for the 10 months, at $7,248,230. The United Kingdom was the principal destination of exports of sewing machines, so far as value is concerned, for both April and the 10 months' period, taking 3978, valued at $209,354, during the month, and 32,392, valued at $1,404,697, during the 10 months. Mexico

United States Exports and Imports of Machinery

	Exports of Machinery	Imports of Machinery	Exports of Metal-Working Machinery
The year 1924...	$317,040,424	$9,711,618	$8,644,444
1925			
January	28,117,952	803,829	845,986
February	23,215,776	814,703	707,445
March	33,932,473	999,237	1,364,930
April	33,468,086	1,167,099	1,694,761
May	32,164,865	861,655	1,230,914
June	28,746,061	935,487	1,003,325
Fiscal year	338,715,075	10,404,337	14,011,404
July	32,320,533	905,872	1,188,069
August	38,768,823	747,912	1,308,372
September	30,719,342	956,250	989,379
October	31,271,007	996,557	905,826
November	30,084,814	876,113	1,007,376
December	37,933,511	1,448,316	1,155,660
The year 1925...	385,376,676	11,577,911	13,052,916
1926			
January	34,590,693	1,659,971	853,276
February	32,269,767	1,469,170	1,294,934
March	35,241,960	1,567,912	1,297,616
April	38,755,467	1,814,021	1,479,337
Ten months	335,139,521	12,394,861	14,026,896

Imports of Machinery Into the United States

(By Value)

	April		Ten Months Ending April	
	1926	1925	1926	1925
Metal-working machine tools	$14,874	$42,659	$311,413	$248,103
Agricultural machinery and implements	855,890	523,280	3,296,420	2,365,542
Electrical machinery and apparatus	88,943	63,282	821,041	1,306,247
Other power generating machinery	1,814	3,651	21,729	32,037
Other machinery	664,923	363,540	6,226,781	3,340,022
Vehicles except agricultural	187,577	170,687	1,717,477	1,333,000
Total	$1,814,021	$1,167,099	$12,394,861	$8,624,951

Machinery Exports from the United States

(By Value)

	April, 1926	April, 1925	Ten Months Ended April, 1926	Ten Months Ended April, 1925
Locomotives	$116,240	$352,577	$5,759,205	$5,897,583
Other Steam Engines	348,346	47,700	1,291,666	1,465,015
Boilers	138,862	270,057	1,518,269	1,689,852
Accessories and Parts	165,728	208,784	1,735,812	1,601,923
Automobile Engines	1,595,586	2,354,036	11,363,991	8,505,670
Other Internal Combustion Engines	833,531	685,391	6,422,878	5,806,422
Accessories and Parts for	428,499	317,895	3,434,181	2,706,974
Electric Locomotives	434,561	24,478	1,900,561	1,383,568
Other Electric Machinery and Apparatus	672,185	597,048	5,932,131	6,048,790
Excavating Machinery	931,907	144,369	3,876,844	1,783,552
Concrete Mixers	53,473	47,975	696,267	554,795
Road Making Machinery	172,992	166,197	1,344,300	999,534
Elevator and Elevator Machinery	234,253	214,744	2,034,577	1,646,099
Mining and Quarrying Machinery	1,902,403	734,635	11,361,689	8,114,737
Oil Well Machinery	1,201,582	1,053,617	10,839,351	6,251,008
Pumps	591,368	658,915	4,752,534	5,768,273
Lathes	133,194	203,730	2,105,701	1,392,083
Boring and Drilling Machines	99,025	89,784	587,759	619,104
Planers, Shapers and Slotters	36,357	33,215	327,769	406,658
Bending and Power Presses	401,335	45,162	592,561	664,894
Gear Cutters	28,437	70,017	573,236	497,778
Milling Machines	147,055	124,901	1,163,632	947,122
Thread Cutting and Screw Machines	77,150	140,241	900,811	595,753
Forging Machines	107,688	15,402	473,060	204,960
Sharpening and Grinding Machines	195,687	377,953	2,237,498	2,017,754
Other Metal-Working Machinery	500,870	477,719	3,808,551	3,769,612
Textile Machinery	1,134,210	925,152	10,323,681	8,041,072
Sewing Machines	991,034	940,062	7,248,230	6,521,805
Shoe Machinery	98,353	139,258	1,023,352	1,303,728
Flour-Mill and Gristmill Machinery	105,955	57,600	753,717	628,319
Sugar-mill Machinery	313,852	378,784	6,891,838	8,055,006
Paper and Pulp Mill Machinery	257,370	108,655	1,965,475	1,350,232
Sawmill Machinery	97,996	78,527	789,047	664,525
Other Woodworking Machinery	116,281	164,977	1,146,840	1,121,812
Refrigerating and Ice Making Machinery	404,790	245,961	2,820,059	1,689,437
Air Compressors	448,101	332,961	3,611,750	2,661,732
Typewriters	1,736,853	1,689,928	15,722,922	13,717,392
Power Laundry Machinery	232,318	144,259	1,008,987	837,649
Typesetting Machines	307,454	293,586	3,016,950	2,891,256
Printing Presses	286,036	355,851	4,706,031	4,355,321
Agricultural Machinery and Implements	8,572,687	7,960,824	75,608,568	51,342,062
All Other Machinery and Parts	12,403,881	10,194,559	111,467,240	91,680,098
Total	$38,755,467	$33,468,086	$335,139,521	$268,291,559

Exports of Power-Driven Metal-Working Machinery

	April, 1926		March, 1926	
	No.	Value	No.	Value
Engine lathes	25	$66,813	6	$11,276
Turret lathes	11	22,696	9	27,358
Other lathes	41	43,685	75	70,801
Vertical boring mills and chucking machines	8	30,696	14	26,248
Thread cutting and automatic screw machines	75	77,150	135	75,007
Knee and column type milling machines	104	57,175	14	20,975
Other milling machines	75	89,883	43	53,936
Gear-cutting machines	16	28,437	68	88,525
Vertical drilling machines	28	21,524	46	10,626
Radial drilling machines	7	9,959	5	8,061
Sensitive drilling machines	34	3,163	122	17,078
Other drilling machines	314	60,683	92	13,341
Shapers and slotters	33	26,849	34	34,917
Planers	111	9,508	2	558
External cylindrical machines	50	73,800	52	99,026
Internal grinding machines	21	34,564	22	46,328
Metal-working tool-sharpening machines	260	41,129	48	16,454
Total	1,213	$697,714	787	$620,515

took 4202 sewing machines, valued at $148,259, in April, and 34,218, valued at $1,101,949, during the 10 months. Colombia took 3332 sewing machines, valued at $92,802, in April, and during the 10 months took 20,484, valued at $572,478. Exports of sewing machines to Cuba in April amounted to 3183, valued at $87,222, while for the 10 months the number was 16,580, valued at $452,279.

The United Kingdom also was the principal destination of exports of American printing presses, both in April and the 10-month period. For the single month the United Kingdom took 56 printing presses, valued at $73,983, and for the 10 months took 385, valued at $330,523. South America took nine printing presses, valued at $47,378, in April, while in the 10 months 164 were shipped to that continent, valued at $376,950. In April Canada took 24 printing presses, valued at $40,446, and for the 10 months took 437, valued at $810,975.

France took 5403 American harvesters and binders, valued at $840,886, in April, while for the 10 months that country took 15,316, valued at $2,575,763. Harvesters and binders exported to Denmark in April numbered 860, valued at $147,102, while for the 10 months Denmark took 151, valued at $234,418.

FAVORS RIVETED PIPE LINE

Result of Experiments with 63-In. to 66-In. Mokelumne Conduit

SAN FRANCISCO, May 29.—As a result of recent experiments made by engineers to test the strength of the welded steel pipe that is being fabricated by the Steel Tank & Pipe Co., Berkeley, Cal., for the East Bay Municipal Utility District, Oakland, Cal., for the Mokelumne River water supply project, it has been decided to rivet the circular joints hereafter, and as an added precaution, to weld steel strips upon the upper half of the welded pipe so as to prevent the possibility of rupture in the future.

The test, which was witnessed by a special board of engineers headed by Arthur P. Davis, chief engineer of the district, involved a section 3600 ft. long, or 120 sections of 30 ft. each, and 65 in. in diameter. All joints were welded, the longitudinal seams being welded by the Lincoln automatic arc-welding process. The circular joints were welded on the outside by the acetylene torch, and on the inside by the hand-arc welding process.

Mr. Davis in his report states that, "a pressure of 197 lb. to the sq. in. was applied, and a careful examination of the pipe failed to reveal any leaks of consequence. Only two slight sweats could be found and the leakage was insufficient to relieve any pressure from the pipe. In fact, the heat of the sun by expanding the water increased the pressure after the pumping had ceased, and thus showed greater influence than the leakage.

"While the test was satisfactory as regards strength and water tightness and other conditions imposed, the experience of welding has shown such great imprisoned stresses in the pipe as to make its action doubtful under the application of colder water in the winter. After considering all records and tests, the board of engineers concluded that, while the longitudinal joint welding was entirely satisfactory, the circular welds would be more satisfactory if riveted, on account of the imprisoned stresses shown by the experience of welding. An agreement has been made with the contractor to rivet the circular joints hereafter.

"The welding experience showed that the imprisoned stresses are mostly in the upper part of the pipe near the top, and as an added precaution, it has been concluded to weld steel strips upon the upper half of the welded pipe in place to resist any tendency to rupture in the future."

Seventy-five thousand tons of steel plates are being fabricated for the Mokelumne project by the Steel Tank & Pipe Co., and the Newport News Shipbuilding & Dry Dock Co. The pipe ranges from 63 in. to 66 in. in diameter.

Characteristics and Production of New Hypoid Gears Explained

An outstanding contribution to the summer meeting of the Society of Automotive Engineers, Inc., held at French Lick Springs, Ind., June 1-4, was a paper on "Hypoid Gears," which was presented by Arthur L. Stewart and Ernest Wildhaber of the Gleason Works, Rochester. The paper outlines the new tooth shapes for hypoid gears as well as new methods of production developed by the Gleason company.

Hypoid gears, it is explained, are tapered gears with offset axes. In general, they look like spiral bevel gears, which they will in many cases replace. The tooth action of hypoid gears combines the rolling action of spiral bevel gears with a percentage of endwise sliding. The chief advantages of these gears are noiseless operation, increased load-carrying capacity, the possibility of high reduction and low numbers of teeth, long life and high efficiency.

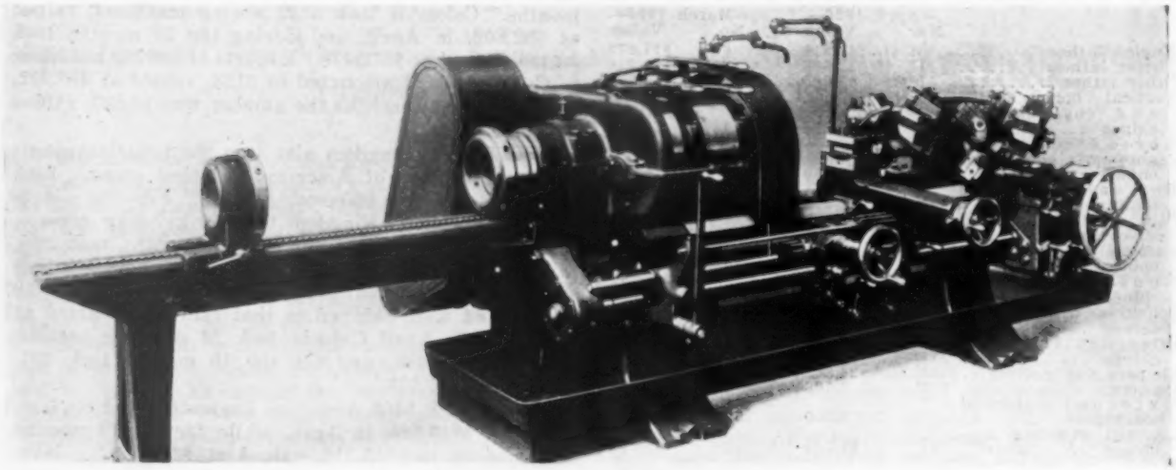
Hypoid gears have always presented great difficulties, both in design and production. Up to the present time, it is said, no gears of this type with mathematically correct forms of teeth adapted for successful commercial production, have been known.

In a new development the Gleason Works present hypoid gears having an accurate and practical tooth shape, and permitting production at no higher cost than spiral bevel gears. The gears may be cut like spiral bevel gears on the existing generators, while the pinions are cut on generators of the same general design, with added adjustment features. Moreover, the newly developed method of cutting is much more flexible than has heretofore been attained. Even the transverse tooth profiles may be modified at will to any extent. They may be curved so as to bear on their whole depth, while transmitting uniform motion, or they may be modified so as to bear only on part of their depth.

These new gears have been tested extensively in rear axles of motor cars under severe conditions and are said to have successfully carried overloads while continuing to operate with an unusual degree of quietness.

An address on "Waste Elimination Activity," by L. W. Wallace, secretary of the American Engineering Council, will be a feature of a dinner meeting of the New York Chapter of the Society of Industrial Engineers to be held Tuesday evening, June 8, at the Cafe Boulevard, New York.

Universal Hollow Hexagon Turret Lathe With 7½-In. Bar Capacity. Twelve speed and 16 feed changes are available



New Large-Bore Turret Lathe

Protection of Ways, 12-Speed Geared Head and 16 Changes of Feed Are Features of 7½-In. Universal Machine

COMPLETE protection of the ways by means of patented covers is a feature emphasized by the Warner & Swasey Co., Cleveland, in announcing the new No. 3-A universal hollow hexagon turret lathe shown in the accompanying illustrations.

Features of the company's previous 3-A turret lathe have been retained, permitting "combined cuts" from the hexagon turret and the square turret at the same time. Tooling provides for "multiple cuts" from each turret station, with sufficient rigidity for heavy feeds.

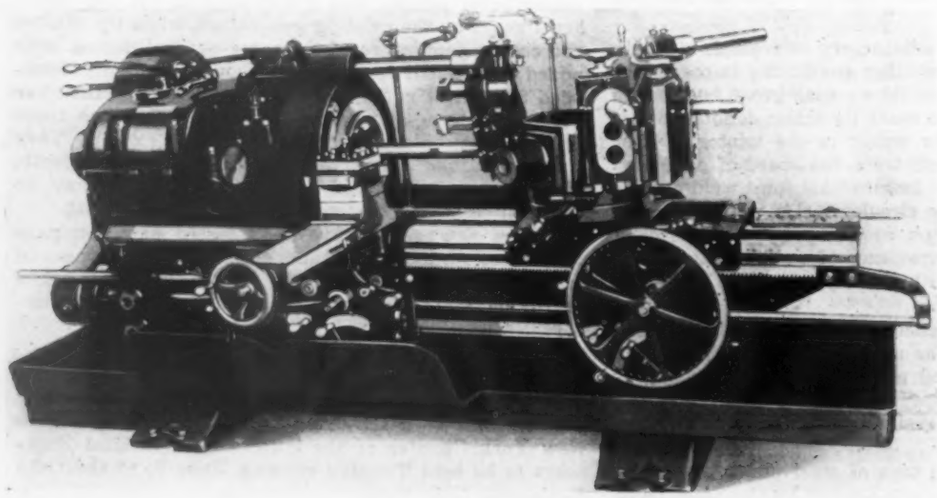
The standard machine will be equipped with a 22-in. chuck. The maximum swing over way covers is 25¼ in., and the square turret carriage clears a diameter of 18 in. The hexagon turret carriage has a maximum longitudinal travel of 48 in. and the square turret has a cross travel of 12¾ in. The machine has a capacity through the chuck for 7½-in. round bars, with a maximum turning length of 39 in.

Way Covers Preserve Accuracy

The patented way covers completely inclose the ways of the bed, regardless of the simultaneous operation of the hexagon turret and the square turret in different positions along the bed. Grit, chips and cutting lubricant are prevented from reaching the surface of the ways, and wear from the continual dropping of chuck wrenches or tools is avoided. The covering of the ways is thus intended to preserve for a long period of time the initial accuracy of the new machine.

The construction of the way covers is shown in the close-up illustration. The pressed steel main top cover extends the entire length of the ways, passing through an inverted "V" slot in the square turret carriage. The main top cover is fastened to the hexagon turret saddle, thus moving independently of the square turret carriage. The left, or free end, of the main top cover is supported by the main cover support, a heavy cast iron member attached to the square turret carriage and moving with it. This support provides solid metal between the main top cover and the ways, so that heavy chucks may be mounted or heavy work gripped without damaging the way covers.

In order to prevent chips from working up underneath the main top cover in the space between the hexagon turret saddle and the side carriage, a lower way guard is provided. This guard is attached to the right side of the square turret carriage, moving with it, and passing into a slot in the hexagon turret saddle. The rear way at the back of the machine is protected by a heavy rolled cover which rests directly on the ways and passes through a tunnel at the back of the all-geared head. Two shorter covers are also added at the back of the hexagon turret saddle to prevent chips from dropping off the tools onto the rear ways.



The Machine Has 22-In. Chucking Capacity. The swing over way covers is 25¼ in., and the square turret carriage clears 18 in. The hexagon turret carriage has longitudinal travel of 48 in. and square turret has cross travel of 12¾ in.

To provide a reliable method of lubrication when the ways are inclosed, the square turret is fitted with an oil plunger pump which can be filled from an ordinary oil can. Oil is thus fed with pressure on to the ways of the machine. Oil is also provided for lubricating the hexagon turret ways.

The head of the machine is cast in one piece with the bed. The all-geared head is designed to produce ample power through a series of broad-faced, hardened and heat-treated alloy steel gears. These run in oil, and can absorb a maximum input of 25 hp. While flood lubricant is provided for the entire head, the main spindle bearings are supplied from oil cups. Twelve spindle speeds, both forward and reverse, are instantly available. The front and back shafts, and also the drive shaft, run in taper roller bearings with adjustment for end play. This construction is stressed as making possible a narrower arrangement of the head in the front and rear, so that the cap bolts of both spindle bearings are readily accessible.

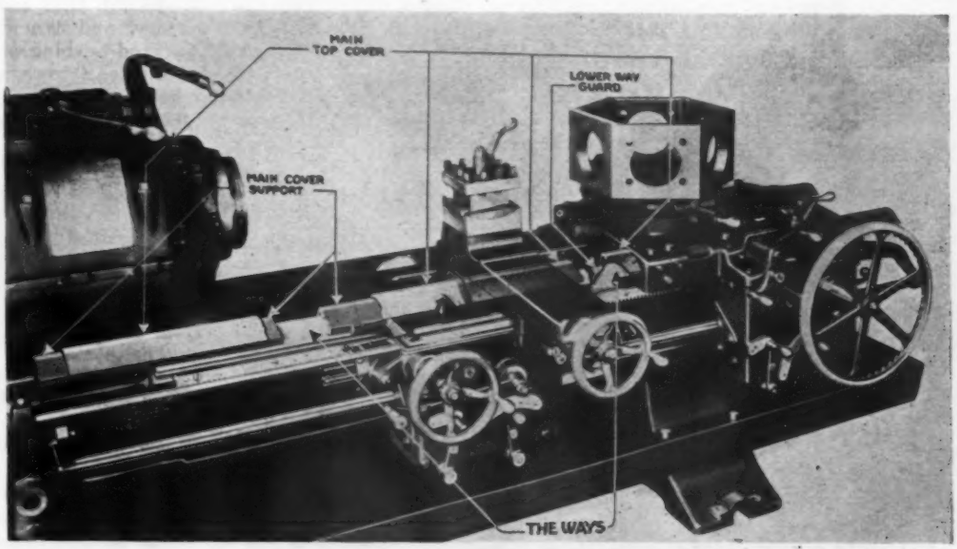
The spindle is of hammered steel, and the outside diameters are ground. The spindle nose, in addition to the thread, has a tapered pilot. In case of wear, it is possible to dress up the taper and the front shoulder to a new and accurate fit. Babbitt metal is used for the main spindle bearings. Starting, stopping and reversing the machine is accomplished through a large, duplex clutch with bronze and steel friction members placed on the back shaft.

The square turret carriage is anchored to a third rail or guide at the lower front of the bed. Thus the cross slide does not have to reach across the ways for rigid anchoring, and the spindle, the hexagon turret, and the square turret can all be brought close to the bed without sacrificing the maximum swing over the square turret carriage. This design also permits the square turret to be run out of the way to the extreme left and past the chuck when chuck and work are less than 18 in. in diameter.

The familiar type of hollow hexagon turret is mounted on a heavy saddle which has its bearing directly on the ways of the bed. A vertical lock bolt, located immediately under the working tool, locks the turret in any of its six positions. The center pivot stud is tapered and cast solid with the turret. It fits into an adjustable tapered bushing in the saddle so that alinement can be maintained. For heavy-duty work, the turret is clamped to its seat by an outside split-ring binding mechanism. This ring has a double taper which hugs the tapers on the saddle and turret respectively. A single lever is employed for operating the ring through a right- and left-hand thread, thus binding the two members.

Power rapid traverse has features already familiar in the former No. 3-A machine and operates in a bath of oil. The hexagon turret has 16 feeds. By a new arrangement eight of these feeds are obtained by levers conveniently located in the turret apron. An additional lever operates a doubling gear in the gear box at the head end, thereby making available a selection of 16 feeds from 0.005 in. to 0.167 in. per revolution of the spindle. The turret feed is engaged and may be reversed by levers also contained in the saddle apron. The feeds are automatically and accurately disengaged by adjustable stops on the roll which is located between the V's. It can be thrown out of engagement.

The narrow construction of the square turret allows the hexagon turret to come close to the work without interference. The cross slide does not extend across the ways and can be moved out of the way of the turret saddle, and past the chuck when not in use. The design maintains a minimum distance from the bed to the center of the working spindle. The new arrangement for feeds provides 16 longitudinal and 16 cross feed changes in either direction. The longitudinal feed to the carriage may be accurately and automatically disengaged by six adjustable stop screws which are mounted on a revolving spool in the apron. A large micrometer dial is mounted on the screw near the handwheel for gaging the depth of cut. Numbered metal clips are provided for securing repetition of settings.



Way Covers Completely Inclose the Ways of the Bed, Regardless of the Simultaneous Operation of the Hexagon and Square Turrets in Different Positions Along the Bed. Grit chips and coolant are thus prevented from reaching the way surfaces, this protection being intended to preserve the initial accuracy of the machine

When arranged with motor drive, the motor is placed on a vertical plate at the rear of the head end leg of the machine. It is attached with a standard slide base so that the belt can be tightened by sliding the motor. Motors ranging from 10 to 25 hp. may satisfactorily be used depending upon class of work it is proposed to handle. Cutting lubricant is supplied by a geared oil pump, which is of the blade type, and is coupled direct to the power traverse drive shaft. It delivers lubricant at the rate of 6 gal. per min.

Standard Bar and Chucking Equipment Available

Standard bar and chucking equipment, suitable for classes of work to be handled on the machine are offered by the company. These include chucks, ratchet bar feed with work support, universal turners and multiple turning heads, etc. Supplementary equipment, such as taper attachment and threading attachment, is also available.

A standard machine tool data sheet has been prepared for the new machine. This contains a complete record of the information given on all necessary dimensions for checking tool interferences, planning work, making factory layouts, time-studies, etc. The sheet is printed on heavy bond, transparent paper so that it can be used for making blue prints, 11 in. x 17 in., which may be filed in standard loose-leaf binders.

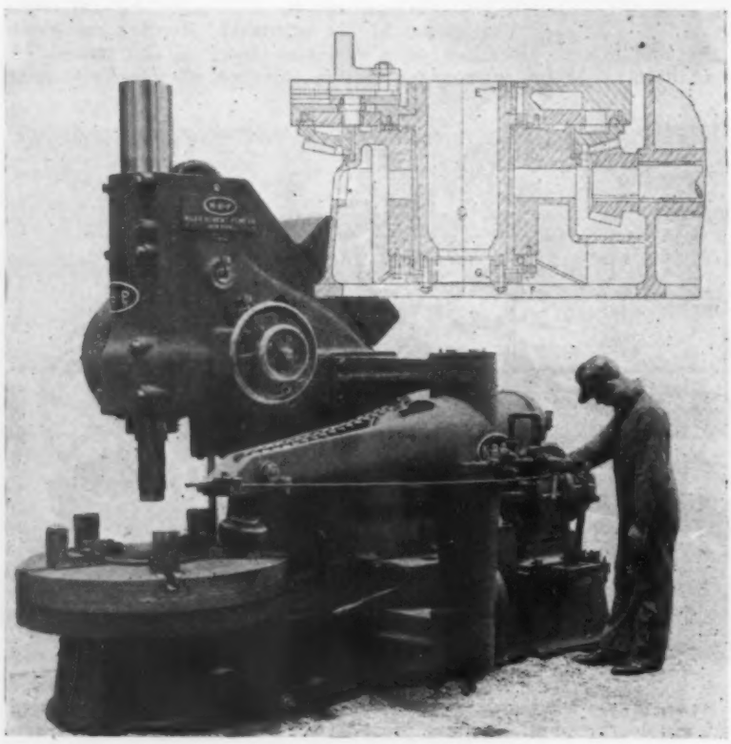
Dimension drawings are available for all of the No. 3-A 7½-in. capacity tools. These give all the dimensions so that the exact capacity of each tool may be known and so that interference between the hexagonal and the square turret tools may be avoided.

48-IN. CAR WHEEL BORER

Automatic Chuck and Quick-Acting Crane Are Labor-Saving Features

Automatic chuck, quick-acting crane and convenient control, combined with massive construction and generous driving power, are features emphasized by the Niles-Bement-Pond Co., 111 Broadway, New York, in connection with the announcement of the new Niles 48-in. car wheel borer here illustrated.

Outstanding is the self-centering chuck which is built into the table and closes and opens automatically, making it unnecessary to use a wrench for tightening or loosening the jaws. The chuck has five hardened steel jaws, which are adjustable on serrated slides fitted in radial slots. For setting the jaws conveniently the table is scribed with circles from 26 to 43 in., the range of wheel diameter. As soon as the table begins to revolve, the wheel is locked rigidly in the jaws, and the heavier the cut the greater becomes the gripping action of the jaws. When the wheel is finished the operator reverses the table drive, and the jaws are loosened automatically.



Car Wheel Borer Equipped With Pneumatic Crane and A. C. Drive. Tapered bushing take-up is provided for the table spindle, as shown in insert

The construction of the chuck is as follows: Steel studs are set in the chuck jaw slides and carry on their projecting ends bronze cam blocks which fit in eccentric slots in a steel cam. The cam is a disk which fits into the chuck table and is confined by a ring. On the underside of the chuck cam, a lug projects down into a cored radial groove in the steel bevel driving gear. This groove is of such a length that it will allow the lug to rotate through an arc of 45 deg.

After the wheel is placed in the chuck the main drive is started in the forward direction. When the table gear has turned through an arc of 45 deg. a hardened steel pin at the end of the radial groove on the upper side of the table gear strikes the lug in the cam. This starts the cam turning and the rotation of the eccentric cam slots relative to the cam blocks draws in the cam blocks together with the studs and chuck jaw slides. Thus the wheel is centered automatically and the jaws grip the wheels rigidly.

The table revolves in a bath of oil on a wide annular bearing. The bevel driving gear is of semi-steel and the bevel pinion of forged steel.

The crane for placing the wheels on and off the table is located on the side of the machine, as shown, and does not require extra head room. It is furnished either of the pneumatic or motor-driven drum type as preferred. The pneumatic crane can be controlled conveniently from the front of the machine. The drum type crane is driven by a separate 5-hp. motor and is controlled by friction clutches operated by a lever. The crane has a long reach, which enables it to swing over two wheel supports. The finished wheel may therefore be lowered at one point while the next wheel is ready to be picked up from the other support.

The change from roughing to finishing feeds is made by means of a single four position lever within easy reach of the operator. The feeds are positive through sliding gears and tooth clutches inclosed in a feed box. The traversing of the bar has been facilitated by the incorporation of a compound gear reduction.

Provision has been made for keeping the boring bar and table spindle in alinement, thus assuring continued accuracy and trueness of wheel bore. Tapered bushings take up wear in the boring bar bearing, tapered bushing take-up being provided also for the table spindle. The method of taking up wear in the latter may be noted from the line-sketch illustration. The table is carried on a large tapered spindle fitted into a tapered bushing *E*. A ring *F* is threaded to the bottom of the spindle. Turning this ring forces the bushing up to take care of any wear. An adjustable collar *G* prevents the table from lifting.

The boring bar has 39 in. travel, which is ample for wheels having maximum A.R.A. standard length of hub. With the bar in the uppermost position, wheels having the maximum length A.R.A. hubs can be swung into position without interference with the chuck jaws or the tool bar.

The method of counterweighting the boring bar represents an improvement. The counterweight runs on rollers on an inclined way on the back of the frame, and the guides are designed so that should the cable break the counterweight cannot fall off the machine and cause an accident.

When ordered special the machine will be equipped with an efficient hub-facing attachment. The hub facing bar feeds from the center outward and so may be put into operation safely while the boring bar is feeding downward. The hand wheels for controlling the traverse of the bar and its feed clutch are located on the operating side within easy reach. Four positive power feeds are provided.

Where a large number of wheels are handled daily the machine may be equipped with power rapid traverse to boring bar. A ½-hp. motor at the left of the boring bar housing drives the feed mechanism through a large gear mounted on the feed friction. Pressure on a push button after the wheel is finished serves to raise the bar immediately. A safety limit switch throws out the motor at the end of the bar travel.

On machines with a.c. motor or belt drive, the table can be furnished with a brake, controlled by foot lever. On machines driven by d.c. motor, the table stops by dynamic braking the instant the stop button is pushed.

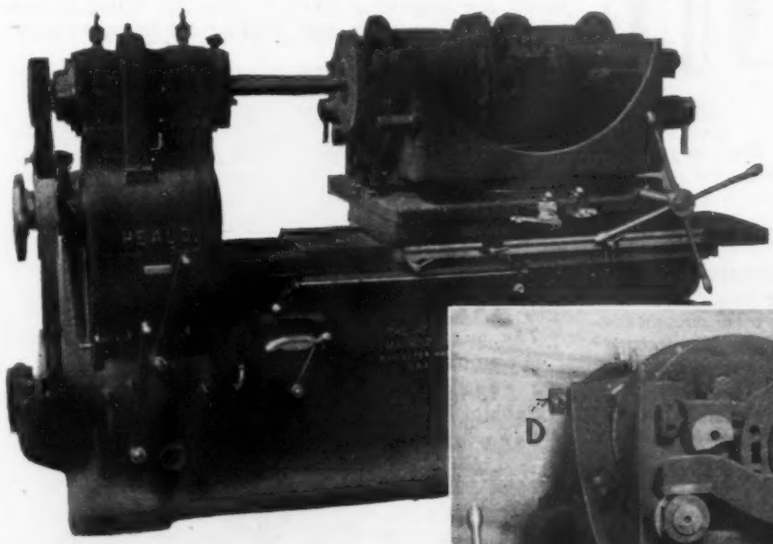
Directors of the Youngstown Sheet & Tube Co., Youngstown, have taken official cognizance of the change by citizens in the name of East Youngstown to Campbell, in honor of President James A. Campbell, and have officially designated the works in that community as the Campbell Works.

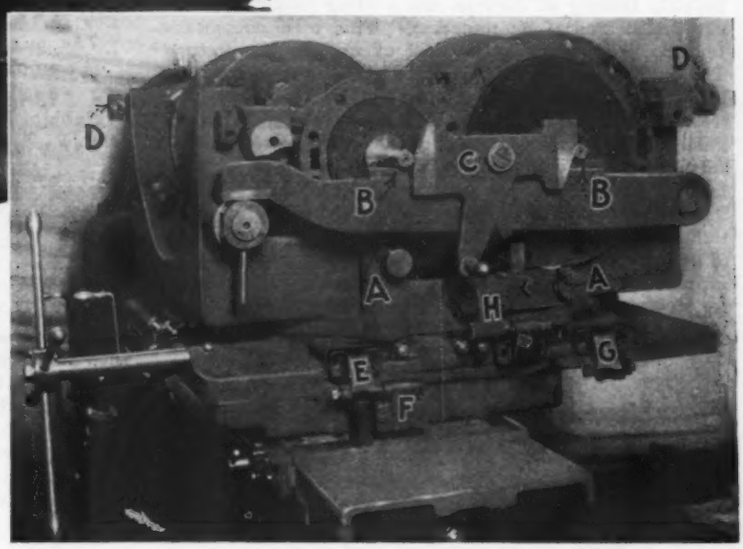
AIR-PUMP CYLINDER GRINDER

Special Fixture Permits Accurate Grinding of All Cylinders at One Setting

A new grinder for use in railroad repair shops, being intended particularly for grinding the cylinders of compound air pumps complete at one setting, is being placed on the market by the Heald Machine Co., Worcester, Mass. The manner of locating and holding by plugs and alining bars is intended to assure that the cylinders be in line and parallel with one another as well as alined with the stuffing boxes.

Fundamentally the machine is the company's style 50 cylinder grinder, increased in size. On the main table of the machine has been installed a massive cross-slide unit with stops for positioning the cylinder in moving the table from one pair of holes to the other. The upper or sliding member of the cross-slide unit is arranged with a worm and worm wheel which is pinned to a cradle fixture mounted directly on the cross-slide. A pilot wheel at the front provides for revolving the cradle in a horizontal plane. Adjustable stops may be set so that the cradle swivels exactly 180 deg.





Railroad Compound Air-Pump Cylinder Grinding Machine. The view at left shows the work in place. The method of holding the work in place on the cross-line is shown below

A fundamental reason for the success of this fixture is the method of loading and holding the work, which is accomplished as follows: With the compressor resting on the floor or bench, the alining bars with taper plugs are inserted in each set of cylinders, the plugs fitting the chamfer on the end of each cylinder bore. Since the chamfer was used by the builder for centering and was never changed, it insures positive centering and alinement.

Having inserted plugs and bars, the compressor is dropped into the cradle, is located endwise by pins and rests with its outer flange on spring plungers *AA* (shown in the close-up illustration), which compress until the ends of the alining bars rest on hardened plates *BB*, parallel to the cross-slide. The spring plungers take a large percentage of the weight, but do not interfere in allowing the bars to ride on the plates. In this manner the compressor is positioned, so that the bores are in a horizontal plane with the table and grinding wheel.

To centralize the compressor, a hardened bevel cam *C* at each end of the fixture, fulcrumed on the center line of the machine, is brought into position between the ends of the alining bars. This moves the block into exact longitudinal alinement, or, in other words, it positions each set of cylinders equi-distant from the center of the machine and the grinding circle. In so doing, regardless how much out of square or out of parallel the holes are worn, it balances the wear, and an equal amount of stock is ground from both sets of holes, thus prolonging the life of the cylinder before it is necessary to rebush it.

The cylinder being in position, the spring plungers, *AA*, are locked and four clamp-screws, *DD*, acting on the top of the outer flanges of all four bores, clamp the work firmly into place. The alining bars and supports may now be easily removed and the compressor is ready for grinding.

The crosswise movement in going from one hole to the other is set by adjustable stops, *E*, *F* and *G*, the swivel movement by *H*. Once determined and set, they require no further attention. It will be noted that in the alining no part of the compressor has been used excepting the chamfers of the holes. No dependence is placed on the feet, which often are broken or worn.

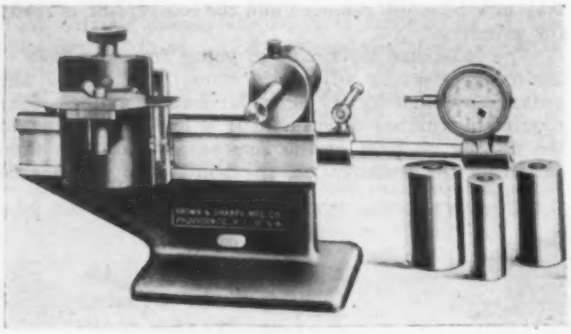
With the compressor in position, one hole—for instance the low pressure or large hole—is ground, the fixture is swivelled 180 deg., the other large hole is ground. Next a crosswise movement of the table is made to the small hole, the wheel is changed to one of small diameter, and that hole is ground. The fixture is again revolved and the other small hole is ground. Only one change of wheels is required in grinding four holes. The machine is furnished with a special ball-bearing, extra-heavy arm especially for this work.

While this grinder is designed primarily for compressor work, the entire cross-slide unit may be removed and a standard cross-slide installed in its place, so that the machine may be used for the general run of railroad repair work, such as side rods, connecting rods, sleeves, triple valves, fire door cylinders and small gas engine cylinders. The machine weighs 9000 lb. without the compressor, and occupies a floor space 5 by 10 ft. It is driven by a 7½-hp. constant-speed motor direct connected to the main shaft, making it a self-contained unit.

A subject index covering 414 specifications issued up to May 1 by the Federal Specifications Board is available as Miscellaneous Publication No. 73 of the Bureau of Standards and may be obtained at 5 cents a copy from the Superintendent of Documents, Government Printing Office, Washington.

Cutter Testing Fixture with Improved Features

A new cutter testing fixture, for use in connection with the sharpening of gear or other formed cutters or hobs, is here illustrated. All sizes of cutters up to 10 in. in diameter are within the capacity of the de-



Cutters Having Undercut Teeth as Well as Those Having Radial Teeth May Be Tested

vice, which is a product of the Brown & Sharpe Mfg. Co., Providence.

The testing plate is carried on a vertical slide which permits testing of cutters, the cutting faces of which are either radial or undercut. This is a convenient feature and broadens the field of use for the fixture. The position of the testing plate is indicated accurately by means of a scale graduated in 50ths of an inch. One end of the test plate is flat for testing straight gashed cutters and hobs, and the other end is in the form of a knife-edge to permit the testing of spiral formed cutters or hobs having spiral gashes.

The dial indicator may be furnished to read to thousandths of an inch English measure or hundredths of a millimeter, metric measure. Five hardened and ground bushings, ranging from ⅜ to 1¾ in. in diamter, are regularly furnished. A collar is provided also, for use when testing thin cutters.

Portable Shear for Cutting Corrugated Sheets

A portable shear for cutting corrugated sheets up to No. 20 gage has been added to the line of Joseph T. Ryerson & Son, Inc., Chicago. The tool is said to cut

Corrugated Sheets Up to No. 20 Gage May Be Cut Rapidly

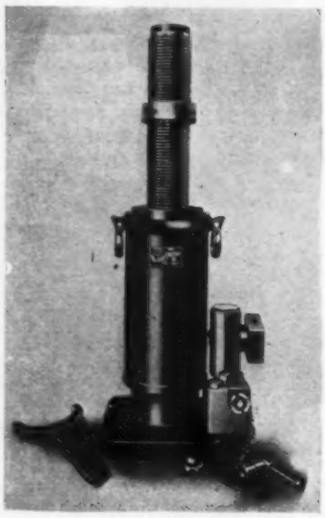
rapidly either straight, on a curve, or obliquely across the corrugation without any distortion.

Ease of operation is a feature. The cutting is done by a pair of rotary double-edged cutters, knurled round the shearing edges. The upper cutter is driven by an internal ratchet which is operated by the handles. The lower cutter runs free. The driven cutter is adjustable by means of a cap screw, thus permitting of continuous, even feed on all sheets within the capacity of the tool. The tool may be withdrawn from the sheet at any point simply by loosening the adjusting screw. This feature permits use of the tool in cutting out corners or angular pieces.

Hydraulic Jack with Safety Features

High efficiency and unusual safety of operation are among the features claimed for the Hydroscrew hydraulic jack here shown, which is being placed on the market by the Watson-Stillman Co., New York.

Compactness and unusually light weight are also emphasized. There are only five working parts, all of which are accessibly located. The oil filling is contained in a reservoir, and refilling not being required,



The Ram Has a Safety Nut for Holding the Load at Any Portion of the Lift. The oil filling is contained in a reservoir. Patents have been applied for

the danger of dirt entering the system to clog the valves is eliminated. The ram is threaded and provided with a safety nut to hold the load at any portion of the lift, and in this connection it is stated that the jack can thus be left for any length of time under full load. The ram cap is a separate piece and can be made to give any height of jack from 20½ to 42 in. The jack is available in two capacities, 20 to 40 tons and 40 to 75 tons, respectively. Patents have been applied for.

Quick Work Done on a Big Forging

The forge works of the Nova Scotia Steel & Coal Co., Trenton, recently did a quick job on a rudder stock for the Anchor-Donaldson Line steamship Concordia. The principal dimensions and description of what was required were received by telephone on Thursday, April 22, in the afternoon. That night an ingot of suitable weight and size was placed in the heating furnace. On Friday the forging was completed and placed in the annealing furnace.

After machine work was begun on Saturday instructions were received to alter some important dimensions, which made it necessary to reheat and reforge part of the piece. This meant the loss of one whole day's work but, in spite of this, the rudder stock was completely finished (except cutting keyways) and shipped on Monday, May 3, just over seven working days after the first telephone instructions were received, according to the Bulletin of the British Empire Steel Corporation.

That this was rather a big job may be judged from the fact that the forging, when ready for machining, weighed over 6 tons and the finished rudder stock weighed nearly 3¾ tons. Owing to its peculiar shape a large amount of cutting had to be done. The principal dimensions were as follows:

Length over all	18 ft. 8¾ in.
Diameter of shaft	12 in. to 11 in.
Coupling	27⅞ in. wide by 3¼ in. thick

WEALTH AND INCOME

Centralized Control, Distribution of Earnings and Payment of Taxes

WASHINGTON, May 28.—Estimating the national wealth in 1921 at $353,000,000,000, and the national income in 1923 at $70,000,000,000, the Federal Trade Commission has issued a report in response to a Senate resolution. The increase in national wealth from 1912 to 1922, as measured in itself, is reckoned at about 72 per cent. But it is stated that, if allowance is made for changes in purchasing power of the dollar, the real increase was nearer 16 per cent, compared with about 15 per cent in population.

Of the national wealth, manufacturing and mining are credited with about 14 per cent each, while land values are credited with $122,000,000,000.

Centralized Control

As to the ownership of natural resources, the report estimates that for 1922 six companies controlled about one-third of the developed water-power, eight companies three-fourths of the unmined anthracite coal, 30 companies over one-third of the immediate reserves of bituminous coal, two companies over one-half of the iron ore reserves, four companies nearly one-half of the copper reserves, and 30 companies about one-eighth of the petroleum reserves.

The wealth of the corporations is developed in the report on the basis of special statistics obtained from the Treasury Department, for which the book values show an aggregate amount of $102,000,000,000 in 1922. Manufacturing corporations had the largest amount, estimated at nearly $34,000,000,000, among which the producers of various metals and metal products were the most important. The railroad corporations had a greater amount of wealth than any other single industry and much the largest average amount per company.

Distribution of Income

The division of the total national income between labor and capital, before deducting any taxes payable by either of them, is given as 55 per cent in wages and salaries and 45 per cent in profits, rent and interest, for 1923. Labor's proportion was lowest in 1918, and capital's proportion was lowest in 1921. These proportions, as shown for different branches of industry, varied widely. Thus, in agriculture, the share going as wages is quite small, because most of the work is done by the farmer and his family, but the share of wages and salaries in the railroad business was nearly 70 per cent in 1923, and in the construction industry it was over 90 per cent.

The amounts which labor and capital have to pay in taxes are not generally ascertainable in a form which permits a separate estimate for each, but taxes directly paid by incorporated business enterprises (not including the taxes payable by the bondholders, etc.) are estimated at 6.3 per cent of the total income for 1923, says the report.

Pittsburgh District Open Shop Coal Mines Gain Production

The Pittsburgh Coal Co. now has 11 of its Pittsburgh district mines in operation on the November, 1917, scale of wages and for the week ended May 22, reports a total production of 53,466 tons, the largest tonnage of any one week since the company started operations on an open shop basis last August. It is estimated that the total open shop tonnage of the former Pittsburgh union district for the week was approximately 100,000 tons, including the coal taken out of eight other mines which are being operated on the open shop basis by five other companies.

Westinghouse Building Program

The Westinghouse Electric & Mfg. Co. has a building program calling for an expenditure of $5,525,000, according to T. P. Gaylord, acting vice-president of the company. New factory structures or office buildings are now in course of construction at East Pittsburgh, Pa., Mansfield, Ohio, Detroit, St. Louis, East Springfield, Mass., Sharon, Pa., and Derry, Pa.

A new general office building now nearing completion at East Pittsburgh will cost $1,500,000. The structure is 11 stories high, with a floor area of 165,000 sq. ft. Plans for the constructon of a $500,000 storehouse for finished products at Mansfield, Ohio, which have been approved, call for a building of steel-brick design, four stories high and a floor area of 130,000 sq. ft.

A building under construction in Detroit represents an expenditure of $400,000. The building is four stories, of concrete construction with brick exterior. It will have a floor area of 100,000 sq. ft. It will serve as an office, warehouse and service station.

The George Cutter Co., a Westinghouse subsidiary, has under construction a $300,000 building in St. Louis, for a cement pole plant, a new Cutter industry. The building is one story high and will have a floor space of 38,000 sq. ft.

Plans have been completed for additional buildings at East Springfield, Mass., that will represent an outlay of approximately $475,000. The principal part of the program calls for a three-story office building, which will provide executive rooms for the engineering, sales, drafting and mechanical departments. The cost of this building will be $275,000. A four-story extension to be built on the main factory will be of heavy mill-type construction, which, with other improvements, will cost approximately $200,000.

The program for Sharon, Pa., includes a five-story mill type building of brick and steel construction for light manufacturing purposes. A one-story building also will be erected for heat treating and galvanizing work. A two-story office building of brick and steel is now under construction in Derry, Pa., costing $75,000.

Iron and Steel Institute Postponed Meeting

The president has decided that the postponed May annual meeting of the Iron and Steel Institute will take place on Thursday and Friday, June 3 and 4. The meeting will be held, as usual, in the rooms of the Institution of Civil Engineers, Great George Street, London. The program, as circulated on April 8, will be adhered to as nearly as possible.

Officers of Steel Treaters' Chapters

The new officers of the Syracuse chapter of the American Society for Steel Treating for the coming year are as follows: Chairman, Walter Bolton, Brown-Lipe-Chapin Division of General Motors Corporation; vice-chairman, W. R. Frazer, Halcomb Steel Co.; secretary-treasurer, S. P. Peskowitz, Halcomb Steel Co.

New officers of the Schenectady chapter of the American Society for Steel Treating for the coming year have been elected as follows: Chairman, C. K. Getchell, engineer in charge of standard practice, American Locomotive Co.; vice-chairman, Dr. Samuel L. Hoyt, research metallurgist, General Electric Co.; secretary-treasuurer, James Taylor, metallographist, American Locomotive Co.

Thirty salesmen from widely separated offices of the Link-Belt Co., Chicago, participated in a sales school at the Indianapolis plant on May 11 to 14. The salesmen had the opportunity to inspect the plant and they received coaching in company policies and standards of practice. This is the fifth annual event of this type which has been held by the company.

Where Steel Exports Went in July-April

Canada Took 348,955 Tons of Nine Leading Items in Ten Months—Japan Holds Second Position with 130,033 Tons, Followed by Cuba, 55,860 Tons—Mexico Took 29,828 Tons

Exports from United States, by Countries of Destination

(In Gross Tons)

	Steel Plates				Galvanized Sheets				Black Steel Sheets			
	April		Ten Months Ended April		April		Ten Months Ended April		April		Ten Months Ended April	
	1926	1925	1926	1925	1926	1925	1926	1925	1926	1925	1926	1925
Total	*10,397*	*11,728*	*93,649*	*66,723*	*17,746*	*12,093*	*134,288*	*125,180*	*17,760*	*7,793*	*120,120*	*91,982*
Canada	8,321	9,615	79,482	52,509	2,634	2,886	22,885	15,031	5,476	3,376	41,453	27,841
*Japan	2	762	468	1,193	1,438	847	5,259	8,898	10,885	2,550	63,503	55,466
Cuba	99	26	1,511	825	906	873	10,468	9,760	12	176	660	677
Philippine Islands	5	2	938	850	2,181	1,455	16,130	12,448	467	....	542	454
Mexico	93	102	1,388	841	1,613	786	8,330	5,888	260	....	323	....
Argentina	....	....	....	....	671	853	6,773	41,802	43	178	937	771
Chile	....	....	....	....	151	455	1,352	1,608	....	....	....	....
Colombia	....	....	....	....	665	418	6,962	4,978	....	....	....	....
Central America	....	....	....	....	....	479	....	3,843	....	....	....	....

	Steel Rails				Barbed Wire				Plain and Galvanized Wire			
	April		Ten Months Ended April		April		Ten Months Ended April		April		Ten Months Ended April	
	1926	1925	1926	1925	1926	1925	1926	1925	1926	1925	1926	1925
Total	*15,859*	*11,693*	*121,384*	*148,313*	*5,997*	*7,073*	*55,229*	*73,194*	*3,358*	*3,016*	*30,189*	*25,057*
Canada	4,280	1,020	20,320	9,673	531	112	2,601	4,418	963	918	10,735	8,432
*Japan	5,463	1,311	15,220	5,689	....	....	....	....	90	116	696	639
Cuba	815	4,763	22,370	41,797	327	330	3,422	954	171	442	1,391	1,735
Philippine Islands	2,373	220	4,786	3,820	....	....	4,379	....	....	....	....	....
Mexico	54	2,284	4,278	5,297	1,046	664	4,702	4,760	918	400	4,433	3,106
Argentina	....	....	....	....	....	1,206	5,484	7,125	....	11	2,885	468
Chile	232	460	4,145	4,968	....	....	....	....	1	14	46	87
Colombia	352	80	5,375	5,001	457	623	5,697	6,117	....	....	....	....
Brazil	610	558	4,490	6,563	1,205	1,642	9,323	22,178	....	115	....	2,395
Honduras	....	108	....	1,817	....	....	....	....	....	....	....	....
Australia	....	....	....	....	125	120	1,234	2,067	....	470	....	5,443
British S. Africa	....	....	....	....	22	299	3,175	5,129	....	....	....	....

	Tin Plate				Plain Heavy Structural Material				Steel Bars			
	April		Ten Months Ended April		April		Ten Months Ended April		April		Ten Months Ended April	
	1926	1925	1926	1925	1926	1925	1926	1925	1926	1925	1926	1925
Total	*22,124*	*14,389*	*156,108*	*118,941*	*11,616*	*8,853*	*105,428*	*85,008*	*13,096*	*9,427*	*105,081*	*80,452*
Canada	3,158	3,436	28,416	20,595	7,209	4,866	79,082	62,653	6,067	5,072	63,981	36,618
*Japan	5,538	3,918	41,685	46,851	1,029	278	2,038	3,906	150	63	1,164	1,725
Cuba	368	538	2,877	4,714	1,185	596	8,468	10,723	352	460	4,693	8,556
Mexico	856	691	4,357	3,970	....	....	....	....	....	....	2,017	....
Argentina	1,029	563	5,804	7,345	....	....	....	....	....	....	....	....
Chile	841	878	5,781	3,609	521	152	2,017	3,156	....	....	....	....
United Kingdom	....	....	....	....	....	....	....	....	3,321	1,424	12,961	13,396
China	2,752	1,009	18,609	4,682	....	....	....	....	....	....	....	....
British India	....	....	9,854	5,390	....	....	....	....	....	....	....	....
Italy	1,613	825	5,575	....	....	....	....	....	....	....	....	....

*Includes Chosen

Destination of Iron and Steel Exports from the United States

(In Gross Tons)

Country	April, 1926	January through April 1926	January through April 1925
North and Central America and West Indies	*90,583*	*347,448*	*286,761*
Canada and Newfoundland	64,139	252,708	180,408
Cuba	8,901	32,909	40,152
Mexico	10,780	33,402	42,703
Guatemala	659	6,079	1,721
Salvador	500	5,096	7,293
Panama	573	3,096	3,737
British West Indies	894	2,771	2,484
Other West Indies	1,883	5,910	3,114
Other Central America	2,254	5,477	5,149
South America	*30,543*	*120,130*	*117,236*
Argentina	5,152	24,216	50,455
Venezuela	5,299	24,345	10,613
Colombia	4,171	20,985	18,398
Chile	3,771	18,831	14,389
Peru	5,549	14,412	4,924
Brazil	5,313	13,756	14,566
Other South America	1,288	3,585	3,891
Europe	*17,851*	*50,797*	*33,967*
United Kingdom	6,305	18,146	15,251
Italy	8,121	15,126	4,779
France	641	5,913	1,549
Russia	98	2,802	96
Rumania	107	1,515	141
Turkey	8	636	971
Other Europe	2,571	6,659	11,180
Far East	*54,300*	*172,208*	*99,290*
Japan	29,850	96,265	46,531
Philippine Islands	7,880	20,698	17,557
India	1,697	12,534	6,917
China	4,061	12,011	9,925
Dutch east Indies	5,617	12,820	4,569
Australia	2,885	7,670	7,642
Kwangtung	125	3,531	746
British Malaya	977	4,062	1,875
Other Asia and Far East	1,208	2,617	3,528
Africa	*1,172*	*5,076*	*17,582*
British South Africa	119	2,088	15,799
Egypt	977	2,189	1,155
Portuguese East Africa	46	635	458
Other Africa	30	164	170
Totals	194,449	695,659	554,836

In This Issue

Says steel mills are cutting in on jobbers' business.—Some producers are giving mill prices on small orders which are legitimate warehouse business. President of steel jobbers' association recommends adoption of a code of practice to protect warehouse business.—Page 1575.

Sherman law is stupid, says Department of Justice ex-counsel.—Insufficient profits in many lines call for an amendment legalizing price agreements between producers and consumers.—Page 1576.

Population of U. S. has tripled in 55 years.—From 39 millions in 1870, it is now 116 millions. Rate of future increase will be lower because of immigration restriction.—Page 1578.

"Ballyhooing" about higher prices served no useful purpose.—Steel jobber gives thanks that there were no attempts made this year to create an impression that higher steel prices were due. Business prophecies generally are characterized as "mere guesses."—Page 1576.

Look for continued trend toward large manufacturing plants, says Alexander.—In most industries big plants are the most economical manufacturing units. The future will see steady growth in concentration of production in huge factories.—Page 1578.

College graduates are not eager to take up foundry work.—They flock into fields where the work is cleaner and the initial pay higher, overlooking the fact that overcrowding there prevents the more rapid advance the foundry industry offers the bright young engineer.—Page 1573.

New oil-electric locomotive shows marked economy.—Hauls a loaded freight train 537 miles, without taking on additional fuel or water, at a total cost of $26.15 for fuel and lubricating oil.—Page 1577.

Machinery export business is good.—April total close to $39,000,000, best month since last August. Machinery imports are also higher.—Page 1580.

Decide to rivet instead of welding circular joints of steel pipe.—Tests of 63-in. diameter pipe used in Mokelumne River project prove that while welding provides strength and water-tightness, the irregular welds would be more satisfactory if riveted, on account of the imprisoned stresses shown by the experience of welding.—Page 1581.

Automobile output sets new high record for first four months of year.—More than 1.5 million vehicles were produced in the United States, more than 12 per cent above same period in 1925.—Page 1591.

Steel-frame dwellings offer promising new market for steel jobbers, says T. J. Foster.—"Someone must furnish experts for designing and furnishing the materials of construction." Recommends that steel jobbers investigate this field.—Page 1576.

Industry now producing more with less power and fewer men.—High production machinery and more efficient methods have materially reduced the labor and power required per unit of production.—Page 1578.

Is this the root of the agricultural problem?—While mining output per capita, measured in dollars of 1914 purchasing value, rose from $12.51 in 1899 to $26.96 in 1924, and manufacturing output from $77.34 to $134.28, agricultural output *declined* from $69.55 to $64.13.—Page 1579.

America can dismiss its "inferiority complex" regarding foreign trade.—Lack of knowledge of the technique of exporting is no longer general. America is well past the "freshman" stage, and even the newcomer into the field can avoid mistakes by utilizing the complete information furnished by the Department of Commerce.—Page 1597.

National wealth is increasing slightly faster than population.—In the 10 years from 1912 to 1922 the national wealth increased 16 per cent, taking into account changes in the purchasing power of the dollar. Population gained 15 per cent in the same period.—Page 1587.

Coal strike paralyzes British iron industry.—Of the 147 active furnaces at the end of April, it is estimated that only 15 are now in blast. Prospects are gloomy.—Page 1623.

May iron output high.—Average daily production was 112,304 gross tons, only 2.3 per cent under April. On June 1 there were 228 furnaces in blast, nine less than on May 1.—Page 1600.

Takes exception to statement that all the fine sheet mills are in the United States.—Canadian steel man says that the product of the better European mills compares favorably with American sheets.—Page 1598.

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The Iron Age Has a "Column"

READERS have noticed—and favorably—that THE IRON AGE has a columnyst. He represents the Reader Service Department of the Iron Age Publishing Co. His has been in truth "The Last Word," appearing as it does on the last reading page of each issue.

While an impelling motive in compiling the column has been the desire to make a telling point of some current happening or timely observation in commerce, finance and industry, the author's major task of looking after the interests of specific readers has resulted in frequent intimate references to THE IRON AGE itself. As helping to personify the publication to its readers, we welcome such sallies, and miss our guess if they do not go far toward increasing interest in, and enhancing value of our weekly efforts.

For News Summary See Reverse Side

HEAVY IMPORTS IN APRIL

Greatest Inflow of Iron and Steel in More Than Three Years—Large Movement of Pig Iron

SUPPLEMENTING the record of April imports on page 1521 of last week's issue, figures are given below for pig iron imports by countries and for imports of iron ore by countries of origin. While the incoming tonnage of pig iron was about the same as in March, it was 65 per cent higher than in April, 1925.

Sources of American Imports of Iron Ore

(In Gross Tons)

	April		Ten Months Ended April	
	1926	1925	1926	1925
Chile	139,800	61,400	1,074,800	970,875
Canada	586	448	6,237	4,820
Cuba	39,350	65,142	414,362	319,650
French Africa	14,300	18,150	111,586	172,439
Spain	174	11,385	90,862	111,891
Sweden	.....	7,839	105,744	256,548
Other countries	521	1,824	65,543	19,929
Total	194,731	166,188	1,869,133	1,856,152

Of the 8553 tons of structural shapes imported in April, 6647 tons came from Belgium and 1027 tons were credited to the Netherlands. Of the rails imported in April, Belgium provided 5107 tons; Germany, 1092 tons; Canada, 1134 tons and the Netherlands is given credit for 1202 tons. Of the 5040 tons of cast iron pipe imported in April, 3660 tons came from Germany; 1078 tons from Belgium and 299 tons are listed as coming from the Netherlands. The United Kingdom was the leading source of pig iron imports in April, supplying 15,651 tons, while Germany ranked second with 13,529 tons. British India was third with 9798 tons.

Belgium was the leading source of American imports in April, supplying 20,575 tons of the total of 112,255 tons, while for the four months that country ranked third as the source of imports, providing 57,853 tons out of the total of 384,642 tons. The United Kingdom ranked second as the source of imports in April, furnishing 19,208 tons, put was first for the four months, supplying 72,079 tons. Germany was close to the United Kingdom as a source of imports in April, providing 18,578 tons, while for the four months that country was second, with 67,546 tons.

Exports of casing oil line pipe in April amounted to 10,698 tons, the more important shipments being divided as follows: Venezuela, 2773 tons; Argentina, 2059 tons; Dutch East Indies, 1607 tons; Peru, 1238 tons and Mexico, 1029 tons. Exports of black welded pipe for the month totaled 7358 tons, divided among the more important countries of destinations as follows: Japan, including Chosen, 2124 tons; Canada, 985 tons; Mexico, 760 tons; Cuba, 672 tons and Chile, 614 tons. Exports of galvanized welded pipe for April amounted to 4469 tons, of which 570 tons went to Mexico; 562 tons to Cuba; 417 tons to the United Kingdom, and 408 tons to Australia.

United States Imports of Pig Iron by Countries of Shipment

(In Gross Tons)

	April		March,
	1926	1925	1926
British India	9,798	14,557	14,558
Netherlands	8,330	3,781	9,231
Germany	13,529	7,221	13,900
United Kingdom	15,651	5,715	12,250
Canada	939	420	559
Belgium	650	1,065	1,733
France	5,051	520	2,150
Other countries	411	20	444
Total	54,359	33,299	54,825

AUTOMOBILE PRODUCTION

First Four Months a New High Record—April Beaten Only Once

Production of automobiles in April showed an increase over March, both in the passenger car and the truck groups, according to figures of the United States Department of Commerce. Passenger cars were produced to the number of 382,631, and trucks to the number of 50,272. The former was with one exception (last October) the largest monthly total in our history. The latter was with one exception (last September) the largest monthly total in our history. Together they make 432,903 vehicles, which is second only to the 438,418 vehicles turned out in October, 1925.

In the first four months of the year more than 1,500,000 vehicles were produced in the United States. This includes 1,356,379 passenger cars and 162,461 trucks. Both are new high records. The increase over the first four months of 1925 was about 18 per cent in passenger cars and nearly 10 per cent in trucks, the 1925 figures having been 1,147,673 passenger cars and 148,922 trucks. The highest previous production in the first four months of any year was that of 1924, when the output included 1,309,125 passenger cars and 130,357 trucks. The corresponding production in 1923 included 1,143,054 passenger cars and 115,274 trucks. No year previous to 1923 showed figures of any such magnitude. All figures given are exclusive of Canadian production, which has been running at about 4 per cent of the United States figures.

FOUNDRY EQUIPMENT SALES

April Below March But Ahead of Last Year—Four Months Show Increase

Sales reported by the Foundry Equipment Manufacturers Association, Cleveland, show an April total of $434,626, compared with $483,010 in March and with $362,527 in April last year. For the four months of the year total sales have been $1,804,571, compared with $1,481,246 last year, the gain being 22 per cent. With three exceptions, the April total was larger than that of any month last year. It was larger than that of any of the 12 months of 1924. Returns are from 11 firms.

On page 1289 of our issue for May 6 will be found tabulated monthly figures of sales and shipments over the years 1924 and 1925 and the first three months of 1926.

Shipments in April are reported at $402,494, a drop of 23 per cent from the $525,655 of March, but a gain of 22 per cent over the $327,796 of April last year. Orders on hand on May 1 amounted to $506,214, a slight increase over the $504,671 one month earlier. There was a loss of 6 per cent, however, from the $539,232 on May 1 last year.

For the first time for any one week so far this year, loading of revenue freight exceeded one million cars. For the week ended May 15, according to reports filed May 26 by the carriers with the American Railway Association, the total was 1,030,162 cars.

The schedule of the next installments of the ***Business Analysis and Forecast****, by Dr. Lewis H. Haney, Director, New York University Bureau of Business Research, is as follows:* ***June 10****—Activity in Steel Consuming Industries;* ***June 17****—Position of Iron and Steel Producers;* ***June 24****—General Business Outlook.*

PROPOSES COAL WAGE SCALE

Suggestion a Feature of Southern Ohio Pig Iron and Coke Meeting

A plan for a cooperative scale of wages to be applied to the mining of bituminous coal was proposed by Frank A. Ray, consulting mining engineer, Columbus, Ohio, at the spring meeting of the Southern Ohio Pig Iron and Coke Association at the Hotel Gibson, Cincinnati, on May 25. It was suggested that the plan be placed in operation in union coal districts, and that the coal operators agree with the United Mine Workers to make a cooperative sliding scale of wages for each of the coal mining districts. The proposed scale is based on a division of the average selling price of the coal in the district in the proportion that the total average cost of labor bears to the total average cost of producing and marketing coal at all of the commercial mines within the district, computed from an agreed-upon basing scale of wages.

Mr. Ray said that the basing scale for each mining district should be the amended 1917 scale and that the audited accounts of a year's operation of all of the mines in the district should be the basis of determining the average cost of overhead, general expense, taxes, workmen's compensation and all other legitimate expenses incident to the production and marketing of coal. To administer the new plan there would be created an operators' association to which all coal sales would be reported so that the average selling price of coal in the district each month could be computed. A committee of miners would be authorized to examine the association's books and to verify their reports.

J. P. Burton, J. P. Burton Coal Co., Cleveland, read a paper on "Clean Coal" at the afternoon session. He emphasized the fact that operators constantly are seeking to give consumers the best coal available, but the latter should be willing to pay an adequate price if they insist upon clean coal. At the dinner meeting of the association Earl L. Brokenshire, Oglebay, Norton & Co., Cleveland, talked on the mining and the use of fluorspar, and displayed a motion picture of his company's fluorspar properties at Rosiclare, Ill.

C. L. Bransford, superintendent Ashland By-Product Coke Co., Ashland, Ky., was appointed as a delegate of the association to attend a round table discussion on the testing of coke, which will be held in Pittsburgh at the meeting of the American Institute of Mining and Metallurgical Engineers in October.

The following new members were elected: R. J. Edmiston, sales manager United States Graphite Co., Pittsburgh; Mr. Kerwin, superintendent blast furnaces Belfont Steel & Wire Co., Ironton, Ohio; N. O. Monsarrat, Monsarrat Mining Co., Columbus, Ohio; F. L. Long, L. W. Williamson and C. M. Bailey, Portsmouth By-Product Coke Co., Portsmouth, Ohio.

Ralph Sweetser, president of the association, presided at both the afternoon and evening sessions.

Bethlehem Steel to Add to Coking Capacity at Johnstown

The Bethlehem Steel Co. will add to its by-product coking capacity at its Johnstown, Pa., works by the installation of one battery of 77 Koppers-Becker ovens, capable of carbonizing 584,000 tons of coal annually, with a resultant yield yearly of approximately 410,000 tons of metallurgical coke. The present capacity at Johnstown consists of 536 ovens of various types with a rated annual capacity of 1,928,600 tons of coke.

Will Resume Bethlehem Merger Hearings Next Week

WASHINGTON, June 1.—Hearings in the Bethlehem merger case will be resumed on June 8, in New York at the offices of the Federal Trade Commission, 45 Broadway. It is expected that the proceedings there will continue 10 days or two weeks, after which they will be held in Washington, where the commission likely will close its side of the case.

Less By-Product Coke Made

WASHINGTON, May 29.—Production of by-product coke in April showed a falling off of 175,000 net tons when compared with that in March, says the weekly report of the Bureau of Mines. This was not solely due to the shorter month, for there was a general slowing down of operations to about 88 per cent of capacity, causing a decrease in the daily rate of output. Total tonnage for April was 3,602,000, with an average daily production of 120,000 net tons; comparable figures for March were 3,777,000 tons and 122,000 tons, respectively. During April the plants operated at 91 per cent of capacity.

Eighty-one plants are now in existence, 75 of them active in April. One new plant began producing during the month.

Beehive coke continues its downward trend, with an estimated production of 981,000 net tons in April. This was 177,000 tons, or 15 per cent, lower than in March, which, in turn, had an output 17 per cent below that of February. The production from all the coke plants was 4,583,000 tons, 79 per cent from by-product ovens and 21 per cent from beehive ovens.

Of the total output of by-product coke during April, 2,982,000 tons, or 82.8 per cent, was made in plants associated with iron furnaces, and 620,000 tons, or 17.2 per cent, was made at merchant or other plants.

Canadian Steel Companies Ask for Higher Duties

TORONTO, ONT., June 1.—The Tariff Advisory Board commenced its work in Ottawa, May 26, by hearing the applications of two Canadian steel companies for more tariff protection. The session was in the nature of a preliminary hearing, which is to be followed by an inquiry into the steel industry in Canada, which will continue over a period of several months. The tariff board will have the assistance of the technical staffs of several Government departments. Shortly a questionnaire will be issued to the various companies, which will be a basis of the investigation. Outstanding in the hearing was the argument of the Algoma Steel Corporation, that the Canadian automobile industry was already adequately protected under the existing tariff, by which was meant the tariff as amended this session of parliament. The Algoma company argued, moreover, that the "drawback" of 99 per cent enjoyed by automobile manufacturers on several articles of steel was unjustified.

Roy M. Wolvin, president British Empire Steel Corporation, argued that, owing to the greatly increased cost and market value of the materials subject to specific duties, the ad valorem effect of these duties had greatly decreased. Today, he contended, these specific duties do not represent the same value that they did when they were imposed. The average percentage of duty collected upon the principal forms of iron and steel which are, or could be, made in the steel works of Nova Scotia, is less than 12 per cent, he asserted, and of this a considerable amount is returned in the form of rebates and drawbacks. The industry in Canada has to suffer a further disadvantage from the importation, free of duty, of primary forms of iron and steel totaling more than $5,000,000.

VALUE OF IRON ORE

Reserves Appraised for 19 American Companies —Discordant Results Obtained

WASHINGTON, June 1.—While declaring that replies from iron ore companies to its schedule asking for information were fragmentary and have been tabulated merely as a matter of interest, on which no conclusions may be based, the Federal Trade Commission in its recently issued report on national wealth and income declares that two companies control well over half of the iron ore reserves of the United States. The report quotes THE IRON AGE, Nov. 6, 1924, page 1204, in using the statement that the total available reserve of iron ore in the United States has been estimated recently at 8,000,000,000 tons. Only a limited amount of this ore is said to be of a high grade, containing 50 per cent or more of iron.

"The present rate of production of iron ore in the United States is about 75,000,000 tons a year," says the report. "The rate of world production is about 170,000,000 tons annually. At this rate the reserves in the United States would be mined out in somewhat over 100 years, unless other large reserves are discovered. There has been a continuous increase in geologists' estimates of the national iron ore reserve. In 1909 the total known reserve was estimated at around 4,500,000,000 tons, in 1914 at from 5,200,000,000 to 7,550,000,000 tons and in 1924 at 8,000,000,000 tons. This increase is apparently due in part to the inclusion of lower-grade ore deposits and in part to the discovery of additional ore bodies.

Location of High-Grade Ores

"The bulk of the high-grade ore (with 50 per cent or more iron content) is in the States of Minnesota, Michigan and Wisconsin, known as the Lake District, and is being mined out rapidly. It is estimated that, with from 50,000,000 to 60,000,000 tons shipped annually from this district, this reserve will be depleted in 20 to 30 years, while the reserve of lower-grade direct smelting ore will last another 10 or 15 years. The reserves of the still lower grade ores are great, however, and will be utilized as the higher grades are exhausted. It has been estimated that, although the present known reserve of comparatively high-grade ore in the Lake District is only about 3,000,000,000 tons, the potential reserve of lower-grade ores eventually available probably exceeds 70,000,000,000 tons."

After reproducing THE IRON AGE table from page 1248, Nov. 6, 1924, showing the estimated available reserve of 8,000,000,000 tons as distributed by districts in the United States, the report takes up a discussion of the value of iron ore reserves.

It is declared that the value of these reserves, like that of other national resources, is essentially conjectural and is limited by the possible future discoveries of ore deposits as well as by the destiny of ore uses and demands. It is said to be further limited by the variations in iron content of different ores and the conditions of production and transportation. An ore reserve of low grade, no matter how abundant, may have comparatively little value, it is stated, and "indeed the fact of great abundance might tend to reduce the total value.

Value of Ore in Ground

"Of the 27 iron ore companies reporting to the commission," the report continues, "19 assigned a value to their ore reserves. The value assigned was in each case a mere total and there was little uniformity in the bases of valuation used. Eight companies, representing 88 per cent of the total tonnage for which valuations were reported, based their valuations on estimates of State tax commissions. The per ton value of these companies ranged from 5c. to 69c. and averaged 48c. The reserves of two companies were estimated by the Bureau of Internal Revenue at 38c. and 42c. per ton, averaging 39.3c.

"Other methods of estimate were on a royalty basis, on book value, land tax value, normal value of $50 per acre, on a basis of probable net profit, and on an independent engineer's report. The values given under these different methods varied from $1 on the probable profit basis to as low as 4c. on the $50 per acre basis. Three companies did not state the basis of their valuations. The wide variations of value per ton shown, therefore, and the diversity of methods of estimates used, make of doubtful merit any estimate of the total value of the national iron ore deposits based on the returns of these 19 companies. The average value per ton assigned to the reserves of the 19 companies was 47c. If this value be applied to the 8,000,000,000 tons of estimated known iron ore reserves in the United States, the resulting total valuation would be $3,760,000,000, but this is apparently much too high.

"Of the 19 companies reporting, the larger companies valued their reserves at a higher average per ton figure than the smaller ones, valuations ranged from an average of 48.6c. per ton, for companies owning over 25,000,000 tons each, to 21.7c. for companies with less than 1,000,000 tons in reserve, as the following tabulation indicates:

Group (Known Reserves) Tons Each	Reported Reserves Tons	Reported Value of Reserves	Average Value per Ton of Reserves
Over 25,000,000	920,730,545	$445,371,253	48.6c.
5,000,000 to 25,000,000	60,010,219	18,474,768	30.8c.
1,000,000 to 5,000,000	14,715,747	4,919,942	33.4c.
Under 1,000,000	2,115,389	459,000	21.7c.
Total reported	997,571,900	$469,224,963	47.0c.

"The 19 companies reported ownership of nearly 1,000,000,000 tons, or about 12.5 per cent of the estimated total reserves. As the table shows, the unit valuations were lower for the smallest companies than for the largest ones."

After reproducing a table from THE IRON AGE of Nov. 13, 1924, page 1286, giving world production, the report briefly deals with exports of iron ore from the United States and concludes the discussion relating to control of iron ore reserves, making reference to an article by Olin R. Kuhn of the Donner Steel Co., in THE IRON AGE of Nov. 6, 1924, in which it is stated that about half of the ore reserve of the Lake Superior District is owned or leased by the United States Steel Corporation and its largest competitor, the Bethlehem Steel Co.

Changes in the Vanadium Organization

Effective June 1, Lawrence K. Diffenderfer tendered his resignation as secretary and treasurer of the Vanadium Corporation of America. Mr. Diffenderfer is leaving the Vanadium corporation to engage in special accounting, tax work, industrial plant and mine valuations and is to be succeeded by Edgar R. Alpaugh.

P. J. Gibbons, at present chief clerk at the Bridgeville Plant, has been elected assistant treasurer.

J. A. Miller, Jr., at present general sales engineer, will become assistant general manager of sales with headquarters in New York.

H. T. Chandler, assistant to the president, who is now located in Detroit, will be transferred to the New York office in the same capacity.

C. N. Dawe, at present with the Studebaker Corporation of Detroit, will become affiliated with the Vanadium corporation as manager of the Automotive Division with headquarters in Detroit.

T. N. Bourke, at present district sales manager, will become assistant manager of the Automobile Division.

The three relief associations of the employees of the Carnegie Steel Co., embracing workers at the McDonald, Upper and Lower Union mill groups, have purchased group insurance aggregating $8,000,000 for the benefit of their more than 5000 members, at an annual cost of $100,000. It is the largest group insurance sale made in the Youngstown district, and follows a similar plan for the employees of the Carnegie company at the New Castle, Pa., plants. The policies range in size from $1,000 to $5,000, based on earnings.

PIPE SIZES ADOPTED

Simplification Program Accepted at Conference —Much Saving Expected

WASHINGTON, June 1.—Adoption of a simplified list of standard sizes, and the elimination of little used and specified sizes of wrought iron and wrought steel pipe, valves and pipe fittings were agreed upon at a conference here on Friday of last week with the Division of Simplified Practice, Department of Commerce, presided over by E. W. Ely. It was attended by manufacturers, distributers and users. The conference recommended that standard sizes and dimensions of wrought iron and wrought steel pipe, and sizes of valves and fittings, be adopted to conform to standard weight pipe, extra strong, and double extra strong. The meeting agreed on standard sizes which brought about the elimination of 762 specified sizes of valves and fittings and 18 sizes of pipe. The simplified list as adopted was published in detail in THE IRON AGE of May 20, 1926, page 1440.

Production, according to the standards agreed upon, will become effective Sept. 1, 1926, but Jan. 1, 1927, will be the effective date for spot stock. A standing committee to consider further revision of sizes from time to time will be appointed to meet future needs. It was estimated that the elimination of the sizes will mean a saving of several million dollars annually.

Eliminating Large Special Sizes

The only change in dimensions in the simplified list was to make them conform exactly to the American Society for Testing Materials specifications, which run out to three decimals instead of two, as were used in the simplified list that had been printed. It also was recommended that large outside dimension sizes 15, 17, 19 and 22-in. of standard weight pipe, a term adopted to replace the term standard merchant pipe, be eliminated, a formal action in accord with the simplified list originally proposed, but also meeting with the views of the A. S. T. M.

Comment upon the savings that will result from the elimination of the sizes that are to be done away with was made by W. C. F. Ayer, representing the Pipe Fitting and Valve Institute, and vice-president Walworth Mfg. Co., Boston, who was chairman of the committee conducting the simplification survey. The outstanding plan, he pointed out, is to eliminate the slow-moving sizes which are little used, so that turnover and therefore savings can be increased for the producer and jobber and at the same time give the benefit to users. Approving the recommendations, George D. McIlvaine, Pittsburgh, of the National Pipe and Supplies Association, said he was amazed at present losses to jobbers in the industry, especially on valves and fittings. Edwin P. Covey, Youngstown Sheet & Tube Co., Youngstown, said he was entirely satisfied with the recommendations and declared that a survey covering 1923, 1924 and 1925 showed that, of the tonnage produced by his company, less than 1/3 per cent was in the sizes eliminated.

Term "Wrought Steel Pipe" Remains

There was considerable discussion of a proposal to change the term "wrought steel pipe," various substitute terms being suggested, such as lapweld and buttweld steel pipe, but finally the original term was left unchanged. It was stated that the American Petroleum Institute is working on plans to eliminate certain sizes of casing and is proposing to do away with the 6⅝-in. size and substitute the 6¼-in. size.

The conference was a part of the program of the National Committee on Metals Utilization and the Division of Simplified Practice to eliminate waste from the iron and steel and related industries.

MALLEABLE CASTINGS

April Production Smaller, But Four Months Show Substantial Gain Over 1925

WASHINGTON, June 1.—Production of malleable castings in April totaled 66,733 net tons, according to reports received by the Department of Commerce from 139 plants, of which four were idle during the month. This compares with an output of 74,520 tons in March. Shipments in April aggregated 66,326 tons, and orders, which a number of plants did not report, were 52,649 tons. The monthly capacity of reporting plants in April was 110,415 tons, operations being at the rate of 60.4 per cent of capacity.

For the first four months production was 283,312 tons, a gain of 13 per cent on the 250,646 tons of the first third of 1925. Except for April, shipments have fallen considerably below production every month since last June.

Large Plans for Long-Distance Cables

When the 1926 construction program of the long lines department, American Telephone & Telegraph Co., was announced recently it was noted that long-distance cable work was by far the largest item on the list. The 750 miles of cable and related equipment to be placed this year, on which construction work is well under way, call for an expenditure of approximately 40 per cent of the $28,000,000 total involved this year.

Announcement is now made that during 1927 and the three following years the extension of the cable system will be on a still greater scale. During this period it is planned to install about 1000 miles of cable a year. The company will also acquire an interest in about 400 miles of cable to be installed annually by various associated companies of the Bell system.

Three cables are now in service between New York and Philadelphia and the fourth will be installed this year. With all of these facilities working, there will be between New York and Philadelphia a total of 210 direct message circuits and 105 circuits on a special contract basis. A second cable is either being installed or is planned for installation in the near future over about one-half of the existing New York-Chicago cable route. Similar conditions exist in some sections of New England.

Honors to Stanley Works Veterans

Marking their long service with the company, 167 men and seven women employees of the Stanley Works at New Britain, Conn., received unusual recognition at a dinner given in their honor on May 22. All the guests had been in the company's employ 25 years or longer and to each was given a gold watch and a gold service pin. Those so remembered constitute the Stanley Quarter Century Club, which was organized on April 8, and included in the membership are the company's chairman, E. A. Moore, President C. F. Bennett, Vice-Presidents W. H. Hart and E. W. Christ and Assistant Secretary P. F. King. Four members of one family have an unusual record, the father having been 57 years in Stanley works employ and three sons respectively 37, 30 and 28 years.

Sheet and Tin Scales Unchanged

YOUNGSTOWN, June 1.—Manufacturers and representatives of workers in Midwestern sheet and tin mills have reached an agreement at the annual conference in Atlantic City on a new 12 months' contract beginning July 1. Basic scales are continued unchanged. Some changes were agreed upon affecting working conditions in tin mills, due to altered conditions arising from installation of more modern equipment, especially mechanical doublers.

A puddling wage conference immediately follows. Puddlers and finishers are asking abandonment of the sliding scale wage agreement and payment of a flat rate instead. They seek $15 per ton for boiling iron.

FABRICATED STEEL

Several Large Jobs in Total of 35,000 Tons of Awards—Pending Business 33,000 Tons

Among the week's structural awards totaling about 35,000 tons was 7600 tons for a bridge at Bath, Me. Two projects in New York each take 4000 tons; a pipe line for the Philippine Islands requires 3200 tons and highway bridges in North Dakota call for 2000 tons. Among 33,000 tons of pending projects are four of more than average size—12,000 tons for a Chicago office building, 7000 tons for a Medical Arts building in Chicago, 4000 tons for a club building in Chicago and 4000 tons for ferryboats for San Francisco. Awards follow:

BATH, ME., 7600 tons, bridge, to McClintic-Marshall Co.

BRATTLEBORO, VT., 400 tons, bridge, to McClintic-Marshall Co.

NEW YORK, 600 tons, loft building, East Fifty-sixth Street, to an unnamed fabricator.

NEW YORK, 4000 tons, ramps for Bronx Terminal Market, to McClintic-Marshall Co.

BROOKLYN, 4000 tons, 35-story office building, Court and Montague Streets, to Taylor-Fichter Steel Construction Co.

JAMAICA, N. Y., 100 tons, office building for Land Estates, Inc., to Bethlehem Steel Co.

GLEN COVE, N. Y., 300 tons, hospital buildings, to J. Cutler Iron Works, New York.

NEW ROCHELLE, N. Y., 450 tons, for theater and store building, to J. Cutler Iron Works.

TRENTON, N. J., 300 tons, building for fire headquarters, to Shoemaker Bridge Co.

DOWNINGTOWN, PA., 550 tons, Downingtown Paper Co., to Shoemaker Bridge Co.

ATLANTIC COAST LINE, 1900 tons, for shops at Tampa, Fla., to Virginia Bridge & Iron Co.

CENTRAL RAILROAD OF NEW JERSEY, 200 tons, crane runway, to McClintic-Marshall Co.

CINCINNATI, 1400 tons, two water tanks for city, to Petroleum Iron Works, Sharon, Pa.

CINCINNATI, 110 tons, chapel for Fenwick Club, to L. Schreiber & Sons Co., Cincinnati.

LOUISVILLE, 175 tons, building for J. B. Hilliard & Sons Co., to Louisville Bridge & Iron Co.

CHICAGO, 485 tons, Union Trust Co. vault, to American Bridge Co.

CHICAGO, 200 tons, Isaacson Garage, to Johnston Iron Works, Chicago.

CHICAGO, 1300 tons, office building near Madison and LaSalle Streets, to McClintic-Marshall Co.

ROBINSON, ILL., 500 tons, Lincoln Oil & Refining Co., to Mississippi Valley Structural Steel Co.

QUINCY, ILL., 325 tons, foundry for Gardner Governor Co., to unnamed bidder.

DECATUR, ILL., 1875 tons, Wabash Railway locomotive shops, to Mississippi Valley Structural Steel Co.

MILWAUKEE, 275 tons, Mack International Motor Corporation service station, to Milwaukee Bridge Co.

SHELBY COUNTY, IOWA, 700 tons, highway spans, to Standard Bridge Co., Omaha, Neb.

NORTH DAKOTA, 2000 tons, two highway bridges, one to the Missouri Valley Bridge & Iron Co. and the other to the Minneapolis Steel & Machinery Co., the latter being sublet to the American Bridge Co.

WABASH RAILWAY, 300 tons, plate girder span, to American Bridge Co.

ST. LOUIS, 850 tons, St. Louis Car Co. building, to Mississippi Valley Structural Steel Co.

MESA, ARIZ., 250 tons, gates and guides for Salt River Valley Water Users' Association, to Chicago Bridge & Iron Co. and Wisconsin Bridge & Iron Co.

KOOSKIA, IDAHO, 310 tons, bridge over Clearwater River, to Vincennes Bridge Co., Vincennes, Ind.

RENO, NEV., 140 tons, addition to library, University of Nevada, to Schrader Iron Works, San Francisco.

OROVILLE, CAL., 125 tons, pipe line for Thermalito Irrigation District, to Montague Pipe & Steel Co., San Francisco.

LOS ANGELES, 225 tons, municipal pipe line called for under specification 792-B, to Llewellyn Iron Works.

ILO ILO, P. I., 3200 tons, pipe line for waterworks, to Pacific Commercial Co., representing German interests.

Structural Projects Pending

Inquiries for fabricated steel work include the following:

NEW YORK, NEW HAVEN & HARTFORD RAILROAD, 200 tons, bridges.

SYRACUSE, N. Y., 250 tons, office building.

NORTH PHILADELPHIA, 400 tons, National bank building.

PHILADELPHIA, 600 tons, track work for subway.

BALTIMORE, 500 tons, building for Knights of Pythias.

CHICAGO, 4000 tons, Midland Club at Adams and LaSalle Streets.

CHICAGO, 7000 tons, Medical Arts Building; Graham, Anderson, Probst & White, architects.

CHICAGO, 12,000 tons, Pittsfield Building; Graham, Anderson, Probst & White, architects.

CHICAGO, 1700 tons, Chatelaine Tower.

IOWA CITY, IOWA, 900 tons, hospital for the University of Iowa.

SAN FRANCISCO, 1000 tons, apartment building, Green and Jones Streets; bids being taken.

SAN FRANCISCO, 4000 tons, 5 ferryboats, Southern Pacific Co.; bids being taken.

OAKLAND, CAL., 400 tons, apartment building, Lake and Madison Streets; bids being taken.

GRASS VALLEY, CAL., 200 tons, syphons for Nevada County Irrigation District; bids June 4.

RAILROAD EQUIPMENT

Orders for 52 Locomotives, But Market Otherwise Is Very Dull

The Louisville & Nashville has ordered 32 locomotives and the Illinois Central 20, but there has been no railroad car business of importance. Details of the week's orders follow:

The Louisville & Nashville has ordered 32 locomotives from the American Locomotive Co. and has placed 10 baggage cars with the Pressed Steel Car Co. and 15 combination baggage cars with the American Car & Foundry Co.

The Southern Pacific has placed 11 dining cars with the Pullman Car & Mfg. Corporation.

The Illinois Central has placed 20 locomotives with the American Locomotive Co.

COMING MEETINGS

June

Association of Iron and Steel Electrical Engineers. June 7 to 12. Annual convention, Hotel Sherman, Chicago. John F. Kelly, 513 Empire Building, Pittsburgh, secretary.

National Association of Purchasing Agents. June 9 to 12. Eleventh annual convention, Ambassador Hotel, Los Angeles, Cal. W. L. Chandler, 233 Broadway, New York, secretary.

Railway Supply Manufacturers' Association. June 9 to 16. Exhibit in conjunction with meeting of Mechanical Division of American Railway Association, Young's Million Dollar Pier, Atlantic City, N. J.

Society of Industrial Engineers. June 16 to 18. Thirteenth national convention, Bellevue-Stratford Hotel, Philadelphia. George C. Dent, 608 South Dearborn Street, Chicago, executive secretary.

American Society for Testing Materials. June 21 to 25. Annual meeting, Chalfonte-Haddon Hall Hotel, Atlantic City, N. J. C. L. Warwick, 1315 Spruce Street, Philadelphia, secretary.

American Society of Mechanical Engineers. June 28 to July 1. Spring meeting, Palace Hotel, San Francisco. Calvin W. Rice, 29 West Thirty-ninth Street, New York, secretary.

American Management Association. June 30 to July 2. Production Executives' Division, Silver Bay, Lake George, N. Y. W. J. Donald, 20 Vesey Street, New York, managing director.

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Better Merchandising by Steel Mills

IT is quite natural that a responsive chord was struck by President Grace of the Bethlehem Steel Corporation in his plea before the recent American Iron and Steel Institute meeting for better merchandising methods on the part of the steel mills. Mr. Grace doubted whether the mills have made anything like as much progress in selling as they have in manufacturing, pointing out the small return on the investment in steel plants.

The time was that steel buying went very largely by spells. It was a matter of "confidence" or lack of confidence. There were buying movements. The wise buyers, and buyers had to be wise, knew when to "get on" and when to "get off." The steel mills also had to "play the game." They needed to avoid being too anxious to sell, but also not to hold off too much or they might find themselves at the end of a buying movement with lean order books, or rather contract books.

There was little distinction between steel commodities then, or lines of consumption. Men in different lines acted pretty much alike. A radical and sweeping change has since occurred. Each line of trade buys according to its requirements. One may be increasing its buying while another is making lighter commitments.

There are various reasons for the change. The most obvious one is that capacity is such that the steel mills do not become so filled up as to make buyers fear they will not secure deliveries unless they make large engagements. Sellers did not a little, also, after the war in shortening delivery periods and in making a contract to deliver, likewise a contract to take.

With the consumer buying according to his actual requirements and not according to the general condition in steel, as in the old days, the mill, instead of selling in accordance with general conditions should endeavor to sell in accordance with the particular conditions existing in each line of consumption.

The mills do not know as much as they should know about the relative amounts of steel that pass into the different consuming channels. There is circumstantial evidence of their proneness to exaggerate the tonnage importance of some outlets. If all outlets were treated in that spirit the aggregate of the percentages would run well above 100. Poor selling policy inevitably results from such misconception. Whenever the mills try to sell an industry more steel than it needs the steel will be sold too cheap.

The circumstances of the individual trades are ascertainable and sales policy should be dictated closely by knowledge of the normal requirements of each trade and the trade's conditions and prospects at the moment. Why, for instance, should the mills try harder to sell to the automobile trade than to the tractor trade, if at the time it is the tractor trade that is the busier? The question has been raised, moreover, whether those steel makers have been well advised who have made special concessions to automobile companies.

Something like two years ago a well-detailed plan for a closer appraisal than is now possible of the amount of finished steel going into the various lines of consumption was put before the directors of the American Iron and Steel Institute; but action was deferred in view of the statistical burden involved. With the more serious attention now being given to increasing the percentage of steel sales that yield a fair profit, a new study of the relative importance of consuming lines would be well worth while.

Cooperation Versus Compromise

ONE fact that the British general strike served to emphasize is the opposite ways in which Great Britain and the United States set out to solve post-war problems. To be sure, we were not beset with conditions as bad as those across the water, but instead of looking for Government initiative, steps were taken early here to develop in American business a spirit of cooperation without asking Government favors. Cooperation here has minimized labor troubles; compromise there has magnified them. It has been a series of compromises, doles, and subsidies, until it seems as though the

final question of compromise is now being faced in the deadlock of coal miners and operators.

Housing problems arose in both countries after the war. Unemployment then was relatively as serious a matter in the United States as in Great Britain. Due in no small way to sagacity in administrative circles, and notably in the Department of Commerce, every means was used to increase industrial activity, always with the thought of securing constructive cooperation by decision within industry itself. Helping greatly to put manufacturers here in an attitude of independence, a vast deal was done and is still being done in the dissemination of critical information for the guidance of business.

Yet, when all has been said as to the contrasts between the American and the British attitude toward post-war readjustments in industry, the question remains whether the lesson of the British coal strike will actually be applied to the situation here. There is no gainsaying the need of developing able leadership in our own bituminous mining industry if Government intervention is to be averted in the next great strike.

Now a Foreign Trade Myth

IN the effort to educate American manufacturers in methods of serving customers abroad it has been charged repeatedly that we in this country are greatly lacking in knowledge of the technique of export business. We have been told over and over again of the manufacturer who shipped to a humid tropical country a consignment of shoes packed in ordinary wooden cases, so that they mildewed and spoiled; of the goods sent to a mountain country in packages which the mule, the only native transport, could not carry; of the valuable machine which smashed to ruin in the hold of a steamer because its flimsy boxing afforded no protection against buffeting. There have been other tales of like nature, all of them true, no doubt. But most of them happened in the days when the United States knew far less than it does today concerning export trade.

However, the stories have been told so often that they have created in the minds of too many producers of goods what Dr. Julius Klein, director of the Bureau of Foreign and Domestic Commerce, calls an inferiority complex. The task of attempting to establish export business has been made to appear much more formidable than it really is.

As a matter of fact, the firm which would undertake to create new markets abroad will have little difficulty in acquiring all needed information as to methods of packing and labeling and the like. The Department of Commerce, the export houses, manufacturers' associations, chambers of commerce, some of the metropolitan banks and their correspondent country banks, are as familiar with the geographic, climatic, racial and other factors of trade with any particular country as are the experts of other older nations. In many instances American export practice has established itself as superior.

Dr. Klein, addressing the New England Foreign Trade Conference at Boston, May 27, gave this significant testimony:

> In general there is nothing thus far on the European commercial horizon to give us serious alarm from the competitive angle. But while we are on the subject of being "panicky" it might be well to analyze that all too prevalent psychological impediment which is best described as our "inferiority complex"—that readiness to accept instantly and without debate the intimation of some of our European rivals that because we have not, like themselves, been in foreign trade for a thousand years we therefore cannot hope to contend with their sacred prerogatives and long established precedence in this field. In fact, we are so constantly reminding ourselves that we don't know how to pack for export, that we know nothing of foreign credits, that we are entirely lacking in export technique—we are still so apt to tremble at these threadbare bugaboos that it might be suggested to the many critics, both foreign and domestic, of our national psychology that here is at least an instance where we have managed to keep well in restraint our widely advertised nationalistic conceit.
>
> As for these ancient "scare crows" which used to be so formidable in the eyes of timid would-be exporters, recent exhaustive surveys by the Department of Commerce have proved conclusively that they are by no means terrifying. The intelligence and resourceful adaptability of the average American merchant and manufacturer can be completely relied upon to do the necessary and to meet every proper requirement of the most punctilious foreign consumer. Recent comparisons in a wide range of commodities and overseas markets give convincing evidence that American packing and credit policies are quite able to meet the stiffest competition. In fact, they are being widely studied and copied by our European rivals.

Chairman Farrell of the National Foreign Trade Council, in his address at the Charleston, S. C., convention, April 28, dealt in like manner with this legend of American incompetence in export trade when he said: "The speeches condemnatory of packing, quality, etc., disappeared from our sessions because we have become thorough in study and practice, competent in manufacturing, merchandising and shipping. The old criticisms of American methods are seldom heard of, and quality is understood. * * * We have learned to study the problems of our customers in other lands, and to apply our experience and ingenuity in their assistance wherever possible. It is the high art of service put to effective, practical and profitable use."

Voluntary Physical Examinations

PERIODIC examination as a preventive of serious disorders is receiving a good deal of attention from those in charge of the physical welfare of industrial workers. For a well man to go to a physician to be examined for possible lurking ailments was considered, not so many years ago, as a sign of morbid concern about health. But the doctors have long recognized that much physical disability is preventable, if disease is recognized and treated in its incipiency. In this category come heart disease, Bright's disease, diabetes, apoplexy, high blood pressure and the "habit" diseases generally—those made more serious by faulty living, such as unwise exercise or lack of exercise, or intemperance in eating or drinking.

In industrial plants cases of unsuspected disease revealed by compulsory physical examinations are common enough. They become important from an economic point of view because the victims are often men of mature years whose experience and skill have won places in the production machine

not easy to fill. In 1914 a large insurance company offered its policy-holders the privilege of an annual physical examination. Six years later a study made of the first 6000 who took advantage of the offer showed that the death rate among them was 28 per cent under that expected. Gradually the public is awakening to the wisdom of the old adage, as applied to health, that a stitch in time saves nine.

Not a few employers, usually through their medical departments, have done much to educate their workers on the possible advantages of periodic examinations. In some establishments the employees are informed that anyone reporting to the plant hospital can receive an examination as thorough and dependable as any private practitioner could give him. Other firms, whose works are not large enough to support a medical department, have advised their employees of the good that might come to them from having their family physicians give them an overhauling.

Quite naturally this phase of welfare work couples itself with compulsory physical examination of workers, which is carried on in an increasing number of establishments. Persons who once have gone to the examining doctor, for what to many is an ordeal, are apt to lose their dread and present themselves again after a time. In fact, this feature of shop life has come to be a matter of routine, and thus for the apparently well man or woman to ask for examination attracts no attention at all. Oftener than might be supposed a hidden weakness is thus revealed, which, taken in its early stages, yields to treatment.

Connellsville Peak of 1906

INASMUCH as the Connellsville coke region reached approximately its maximum production in 1906, a twenty-year retrospect with comparison of conditions is interesting. As shown by figures of the Connellsville *Courier*, which has gathered statistics of the region for nearly half a century, production increased rapidly until 1906, when approximately 20,000,000 net tons was reached, while even in 1912 and 1913 scarcely more coke was made than in 1906, and the average production during the war was less, although one year, 1916, showed more, 21,654,502 net tons.

A picture of conditions in 1906 which, by the way, was quite representative of possibilities, since there was full operation of the iron industry all the year, is given below:

Pig iron production, gross tons.....	25,307,191
Coke consumed, approximate, net tons	30,000,000
Connellsville coke produced, net tons	20,000,000
Total beehive coke produced, net tons	31,843,090
By-product coke produced, net tons..	4,558,127
Total coke produced, net tons.....	36,401,217

At the present time the total production of coke is running at about 50,000,000 net tons a year, and as nearly as can be approximated the blast furnaces are consuming coke at a rate of about 44,000,000 net tons a year. Incidentally it may be mentioned that the blast furnaces are consuming a slightly larger percentage of the total coke produced than they did in 1906, while nevertheless they are using less coke per ton of iron made than in 1906. That, while interesting, is another story.

Of the present coke production, at 50,000,000 tons a year, scarcely more than 20 per cent is beehive, nearly if not quite 80 per cent being by-product. It is the Connellsville region, however, that is here considered. Its production may be estimated by recent *Courier* reports to be running now at about 8,000,000 net tons a year. That is 16 per cent of the total coke being produced. In 1906 the Connellsville region's proportion was 55 per cent.

Almost exactly, in these 20 years intervening, there has been a complete revision in the Connellsville region's position and prospects.

Twenty years ago, with the region producing more than half of all the coke, and with production of pig iron growing rapidly, the positive indication of the trends was that the coal of the Connellsville region would be exhausted in relatively a few years, and certainly by about this time theoretically, although of course practically the production would have tapered off as exhaustion was approached. The whole machinery would not stop with a click. But pig iron production did not increase as rapidly as expected, and by-product coking grew rapidly.

These changes have exerted a double influence upon the value of Connellsville coke properties. In the first place, with the competition of by-product coke the market value of Connellsville coke is reduced. In the second place, by decreasing its rate of production the life of the region is prolonged. It costs so much more to carry Connellsville acreage, or, what is the same thing, the present value of coal in the ground is reduced because the average period of exhaustion is lengthened. Just at this time there is, more or less incidentally, the parlous condition of the bituminous coal industry as a whole, but that is an entirely separate point.

CORRESPONDENCE

Some Fine Sheet Mills in Europe

To the Editor: In your issue of May 20 I note on the "orange bordered" page—which, by the way, is a very fine development—a statement as follows: "American sheets are far superior to foreign makes, etc." This refers to certain remarks on page 1415 by Charles R. Hook, Middletown, Ohio. Apparently his remarks relate to French manufacturers, as no others are mentioned.

Last year Hamilton was selected as a meeting place by the National Association of Sheet and Tin Plate Manufacturers. At that time one gentleman present stated that he had just returned from a trip throughout Europe and that none of their sheet mills would begin to compare with the sheet mills in the United States.

Simply to throw a little additional light on the subject, and to correct any such misapprehension, I should like to state that I have seen in the British Isles sheet mills which, in my estimation, would compare favorably with any on this Continent, and I have inspected most of those in the United States and Canada.

It is doubtless true that some of the smaller mills are old type, and their methods and output are not up to the mark of the latest development. But that will apply, to some extent, on this side of the ocean also. One English concern in particular, located at Newport,

Monmouthshire, has a 50 hot-mill roll train in a line, all up-to-date, heavy-housing, modern equipment, and extremely roomy and well served by electric cranes.

I have never seen a mill anywhere which approximates this in cleanliness, orderliness and the extreme care which is used to keep the products up to the highest possible mark, and this applies not only to black but galvanized sheets as well.

I should dislike very much to have some European visitor state that he had not seen a first-class mill in the United States, when such mills as those at Vandergrift are remarkable for the modern precision, equipment and care used in production. Hence this effort to correct what seems to be a general misapprehension in regard to sheet-producing plants abroad.

A. T. ENLOW,
President, Dominion Sheet Metal Corporation.
Hamilton, Ont., May 21.

German Bounty Payments Disclaimed

Large German Interest Claims No Bonus Is Allowed on Exported Rolling Mill Products—Treasury Refuses Time Extension—Pig Iron Probably Not Included

NEW YORK, June 1.—That countervailing duties on German steel products may not be imposed appears possible from a cable sent by a large German steel interest to its representative in the United States. According to Otto Wolff & Co. export bounties have only been paid to the engineering industry in Germany and these bounties are understood to have been withdrawn. The company's cable to Kurt Orbanowski, 149 Broadway, New York, says:

> On export of rolling mill products, contrary to American opinion, no bonus has been given; only on such rolling mill products as have been consumed in the domestic market for the support of finished products for export, such as engines. For export, this support has been given to this industry on account of its depressed condition, which support, however, according to our information, has now been withdrawn. For our products there exists no export bonus, or bonus of any kind from the raw steel syndicate. We sell only specialties to America, on which inland and export prices are the same. OTTO WOLFF & CO.

The statement in the cable that only "specialties" are exported to the United States is taken to mean that the shipments of this maker are of products rolled to American specifications and often of open-hearth steel.

Several importers have approached the Treasury Department in the past week with the request that some extension of time be allowed them to permit the entry at the present tariff of tonnages sold prior to the decision. One importer has specifically asked for extension of the order to August.

In reply to one such request by an importer in New York, the Treasury Department has stated that "the 30-day suspension of the order is in accordance with the Department's usual practice in issuing instructions resulting in an increase in duties on imported merchandise, and the practice has received legislative approval in Section 516 of the present tariff act, which authorizes the Secretary of the Treasury, if he finds, as a result of a complaint from an American manufacturer, that merchandise has not been correctly classified by the collectors, to direct the assessment of the correct rate upon all merchandise imported or withdrawn from customs custody after 30 days after the date of notice to the collectors." The department further indicated that in view of the above practice it would not be justified in extending the time beyond June 20.

In substantiation of the statement of Otto Wolff & Co. that no bounties are paid or received on exports of their products to the United States, an importer dealing with Friedrich Krupp A. G. claims that certain semi-finished material is purchased by this company in the open market, possibly from the raw steel syndicate. Other material, however, is rolled from the company's own steel production and the corporation is not a member of the raw steel syndicate and receives no bounties of any kind.

Representatives of German steel companies which have been selling to consumers in the United States are arriving in this country or are expected shortly. At present a mill representative from the Gutehoffnungshütte is here and an official of Otto Wolff & Co. arrived today. Representatives from the Phoenix A. G., controlled by the Wolff interests and the Deutsch-Luxemburgische Bergwerks & Hutten A. G., are expected to arrive shortly.

Expected That Pig Iron Will Be Withdrawn from the List

WASHINGTON, June 1.—At the Customs Division, Treasury Department, it was stated today that it is as yet uncertain whether pig iron is included in the list of products from Germany against which the department has issued a countervailing order. The division has cabled to the Treasury attache in Berlin asking for a specific definition, as understood in the trade in Germany, of the terms "rohblöcke" and "vorblöcke," which were used in the Treasury decision. The first term was translated as meaning pig iron, although, as is well known in the iron trade the German designation of pig iron is "roheisen." New York importers have pointed out that "rohblöcke" refers to ingots and that "vorblöcke" is the designation for blooms.

It appears, therefore, that pig iron is eliminated from the list. A further development is that the Treasury has no specific information as to a bonus being paid in Germany on either pig iron or on coke used in the making of export pig iron.

It is announced that the decision, instead of becoming operative on June 13, as originally intended, will become effective June 20.

Inquiry at the State Department developed the fact that contrary to a report in the trade the German government has entered no protest thus far against the Treasury order. It is reported that representatives of German steel interests are on the way to this country to make representations looking to the modification of the recent order.

Agnew, Batteiger & Co. Dissolve

Agnew, Batteiger & Co., Widener Building, Philadelphia, pig iron, alloys and scrap merchants, have dissolved. The principals in the firm were J. Carson Agnew, who was formerly assistant to the president Midvale Steel & Ordnance Co. in charge of iron ore, and R. L. Batteiger, purchasing agent of scrap and other raw materials for the same company. Mr. Agnew and Mr. Batteiger became partners as Agnew, Batteiger & Co. following the sale of the Midvale Steel & Ordnance Co. to the Bethlehem Steel Corporation. Mr. Batteiger has become associated with Hickman, Williams & Co. in charge of scrap sales in the Philadelphia office. Mr. Agnew's plans are undecided. Until a few months ago he was connected with the Rogers-Brown Iron Co. in the ore department.

May Iron Production Declines

Daily Rate 2700 Tons or 2.3 Per Cent Less Than April — Net Loss in Furnaces Is Nine—Output Second Largest This Year

FROM data collected largely by wire, the May output of pig iron declined substantially from that of April. With most companies estimating the production for the last two days, the daily rate last month was 2700 gross tons or 2.3 per cent less than that of April. At 112,304 tons per day, it was, however, still larger than the March rate and the second largest this year. The loss of 2.3 per cent in May compares with an increase in April over March of 3.6 per cent.

Daily Rate of Pig Iron Production by Months—Gross Tons

	Steel Works	Merchant*	Total
May, 1925	74,415	20,127	94,542
June	70,452	18,663	89,115
July	65,715	20,221	85,936
August	68,530	18,711	87,241
September	70,300	20,573	90,873
October	76,464	21,064	97,528
November	77,262	23,505	100,767
December	81,552	23,301	104,853
January, 1926	83,867	23,107	106,974
February	81,148	23,260	104,408
March	85,841	25,191	111,032
April	89,236	25,768	115,004
May	86,682	25,622	112,304

*Includes pig iron made for the market by steel companies.

Pig Iron Production by Districts, Gross Tons

	May (31 days)	April (30 days)	March (31 days)	Feb. (28 days)
New York	229,640	236,730	232,816	201,751
New Jersey	.....	.....	.....	.....
Lehigh Valley	92,696	94,770	93,037	75,728
Schuylkill Valley	81,563	80,290	76,771	67,240
Lower Susquehanna and Lebanon Valleys	36,845	36,755	43,112	39,516
Pittsburgh district	712,232	725,982	750,190	642,236
Shenango Valley	139,201	125,384	119,090	99,357
Western Pa.	145,095	158,790	169,039	118,490
Maryland, Virginia and Kentucky	94,691	98,783	84,488	71,724
Wheeling district	133,792	123,903	125,071	121,326
Mahoning Valley	341,801	348,174	322,570	263,866
Central and Northern Ohio	344,553	340,329	322,698	260,458
Southern Ohio	49,137	46,050	50,000	42,864
Illinois and Indiana	664,477	640,173	656,524	544,069
Mich., Minn., Mo., Wis., Colo. and Utah	153,072	147,902	140,188	134,691
Alabama	254,245	237,808	244,403	228,799
Tennessee	8,388	8,299	11,989	11,300
Total	3,481,428	3,450,122	3,441,986	2,928,415

Coke Furnaces in Blast

Furnaces	Total Stacks	June 1—In Blast	June 1—Capacity per Day	May 1—In Blast	May 1—Capacity per Day
New York:					
Buffalo	21	13	6,000	15	6,660
Other New York	5	3	1,190	3	1,225
New Jersey	3	0	....	0	....
Pennsylvania:					
Lehigh Valley	12	7	2,770	7	2,920
Spiegeleisen	2	2	220	2	235
Schuylkill Valley	12	6	2,440	7	2,675
Susquehanna Valley	6	2	935	2	795
Ferromanganese	1	0	....	0	....
Lebanon Valley	4	1	230	1	230
Ferromanganese	2	1	65	0	....
Pittsburgh District	52	38	21,845	42	23,680
Ferro. and Spiegel	4	3	420	2	265
Shenango Valley	14	9	4,490	9	4,390
Western Pa.	19	9	4,550	10	4,900
Ferro. and Spiegel	2	2	245	2	310
Maryland	6	6	2,430	6	2,635
Wheeling District	12	8	4,000	9	4,460
Ohio:					
Mahoning Valley	26	19	10,600	21	11,605
Central and Northern	22	20	11,100	20	11,440
Southern	13	5	1,585	5	1,535
Illinois and Indiana	43	34	21,400	34	21,340
Mich., Wis. and Minn.	12	8	3,220	8	3,090
Colo., Mo. and Utah	7	3	1,710	4	1,835
The South:					
Virginia	17	1	270	1	270
Kentucky	7	1	345	1	380
Alabama	34	24	8,200	23	7,925
Ferromanganese	1	1	70	1	75
Tennessee	12	2	270	2	275
Total	371	228	110,600	237	115,150

The production of coke pig iron for the 31 days of May was 3,481,428 tons, or 112,304 tons per day, as compared with 3,450,122 tons or 115,004 tons per day for the 30 days of April. Only two months in 1925—February and March—had a daily rate larger than that of May this year.

There was a net loss of 9 furnaces in May, 4 having blown in and 13 blown out or banked. This contrasts with a net gain of only 1 in April, 10 in March and 2 in February.

Capacity Active June 1

There were 228 furnaces active on June 1 as compared with 237 on May 1. The estimated daily capacity of the 228 furnaces was 110,600 tons per day in contrast to 115,150 tons per day for the 237 furnaces operating on May 1. Of the 4 furnaces blown in during May, 3 were merchant furnaces and 1 was an independent steel company stack. The Steel Corporation did not blow in any furnaces. Of the 13 fur-

Production of Steel Companies for Own Use—Gross Tons

	Total Iron Spiegel and Ferro		Spiegeleisen and Ferromanganese*			
			1925		1926	
	1925	1926	Fe-Mn	Spiegel	Fe-Mn	Spiegel
Jan.	2,692,537	2,599,876	23,578	5,418	29,129	7,746
Feb.	2,539,785	2,272,150	18,184	4,910	22,309	7,084
Mar.	2,812,995	2,661,092	20,062	5,449	24,064	7,339
Apr.	2,514,828	2,677,094	21,448	5,341	24,134	7,051
May	2,306,887	2,687,138	22,679	5,294	23,159	6,999
June	2,113,566	.....	19,836	4,972	....	....
½ year	14,980,598	.....	125,787	31,384	....	....
July	2,037,160	.....	16,614	5,074	....	....
Aug.	2,124,439	.....	18,867	4,939	....	....
Sept.	2,109,205	.....	18,381	5,162	....	....
Oct.	2,370,382	.....	21,421	5,071	....	....
Nov.	2,317,888	.....	25,490	6,375	....	....
Dec.	2,528,120	.....	26,072	7,756	....	....
Year	28,467,792	.....	252,632	65,761	....	....

*Includes output of merchant furnaces.

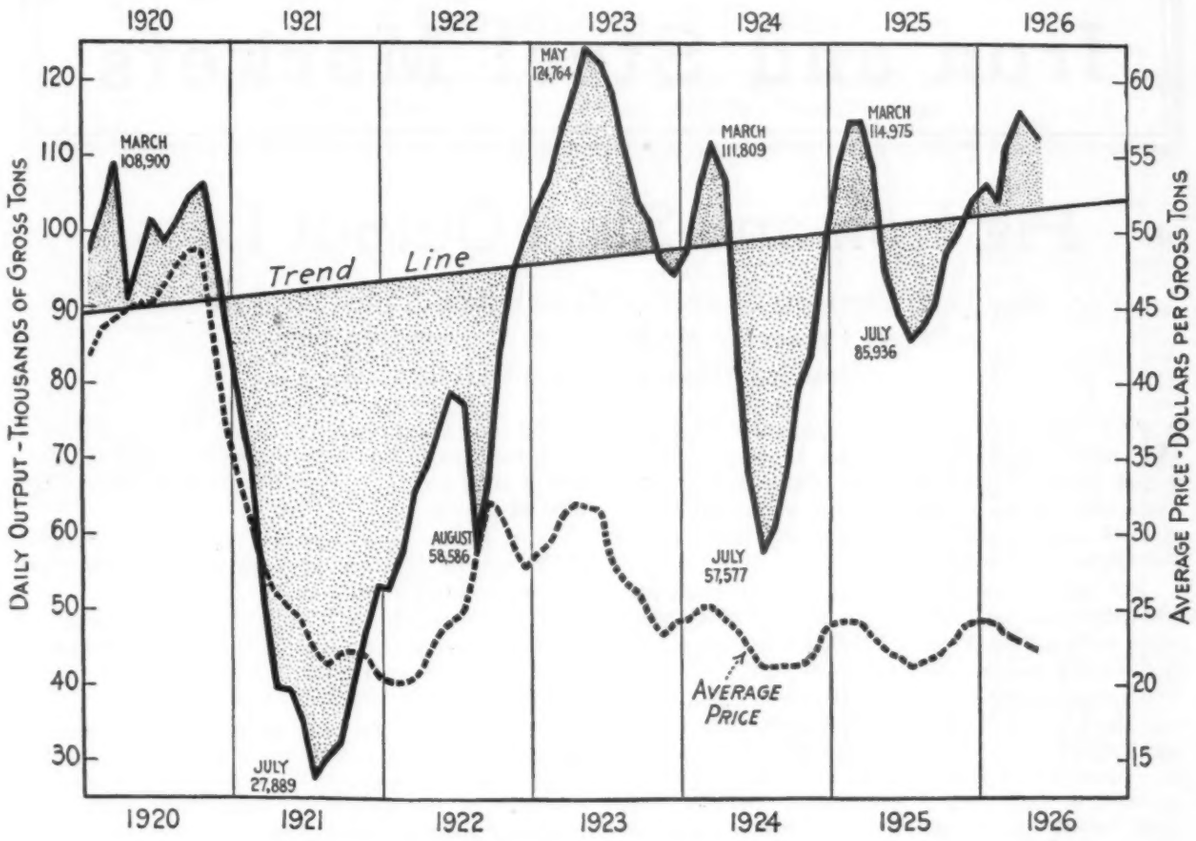
Production of Coke and Anthracite Pig Iron in United States by Months, Beginning Jan. 1, 1924—Gross Tons

	1924	1925	1926
Jan.	3,018,890	3,370,336	3,316,201
Feb.	3,074,757	3,214,143	2,923,415
Mar.	3,466,086	3,564,247	3,441,986
Apr.	3,233,428	3,258,958	3,450,122
May	2,615,110	2,930,807	3,481,428
5 mo.	15,408,271	16,338,491	16,613,152
June	2,026,221	2,673,457	.....
½ year	17,434,492	19,011,948	.....
July	1,784,899	2,664,024	.....
Aug.	1,887,145	2,704,476	.....
Sept.	2,053,264	2,726,198	.....
Oct.	2,477,127	3,023,370	.....
Nov.	2,509,673	3,023,006	.....
Dec.	2,961,702	3,250,448	.....
Year*	31,108,302	36,403,470	.....

*These totals do not include charcoal pig iron. The 1925 production of this iron was 196,164 tons.

Daily Average Production of Coke and Anthracite Pig Iron in the United States by Months Since Jan. 1, 1922—Gross Tons

	1922	1923	1924	1925	1926
Jan.	53,063	104,181	97,384	108,720	106,974
Feb.	58,214	106,935	106,026	114,791	104,408
Mar.	65,675	113,673	111,809	114,975	111,032
Apr.	69,070	118,324	107,781	108,632	115,004
May	74,409	124,764	84,358	94,542	112,304
June	78,701	122,548	67,541	89,115	.....
½ year	66,578	115,147	95,794	105,039	.....
July	77,592	118,656	57,577	85,936	.....
Aug.	58,586	111,274	60,875	87,241	.....
Sept.	67,791	104,184	68,442	90,873	.....
Oct.	85,092	101,586	79,907	97,528	.....
Nov.	94,990	96,476	83,656	100,767	.....
Dec.	99,577	94,225	95,539	104,853	.....
Year	73,645	109,713	85,075	99,735	.....



Daily Pig Iron Output in May About 2.3 Per Cent Less Than in April; Prices Slightly Lower

Inclined line represents the gradually increasing theoretical needs of the country, and shows that production is now above the so-called normal. Dotted line represents the average price in dollars per gross ton of No. 2 Southern at Cincinnati, No. 2 at Chicago and No. 2X at Philadelphia

naces shut down, 3 were Steel Corporation stacks, 6 were those of independent steel companies and 4 were merchant furnaces.

Manganese Alloy Output

The ferromanganese output in May was 23,159 tons, comparing with 24,134 tons in April. The spiegeleisen production was 6999 tons in May or the smallest this year.

Abandoned Furnaces

The two Paxton furnaces of the Central Iron & Steel Co., Harrisburg, Pa., and the Oxford furnace of the Replogle Steel Co. are being dismantled. The blowing in of the new furnace of the Inland Steel Co., Chicago, thus makes a net loss of two furnaces, bringing the total furnaces regarded as likely to make coke pig iron to 371.

Furnaces Blown In and Out

Among the furnaces blown in during May were the following: The Sheridan furnace in the Lebanon Valley; the new furnace of the Inland Steel Co. in the Chicago district; one furnace of the Woodward Iron Co. and the Tuscaloosa furnace in Alabama.

Among the furnaces blown out or banked during May were the following: One Buffalo and one Susquehanna furnace in the Buffalo district in New York; the Keystone furnace in the Schuylkill Valley; one Edgar Thomson furnace of the Carnegie Steel Co., one furnace of the Pittsburgh Steel Co. and the Clinton furnace in the Pittsburgh district; one Cambria furnace of the Bethlehem Steel Corporation in western Pennsylvania; one Bellaire furnace of the Carnegie Steel Co. in the Wheeling district; one Ohio furnace of the Carnegie Steel Co. and one Hubbard furnace of the Youngstown Sheet & Tube Co. in the Mahoning Valley; one Calumet furnace of the Wisconsin Steel Co. in the Chicago district; one furnace of the Colorado Fuel & Iron Co. in Colorado, and one North Birmingham furnace of the Sloss-Sheffield Steel & Iron Co. in Alabama.

Temperatures in Open-Hearth Furnaces

In the course of an investigation of requirements of refractories for the open-hearth steel furnace, metallurgists of the United States Bureau of Mines have measured temperatures in several open-hearth furnaces in the Pittsburgh district. It was found that near the end of the heat, at the high temperatures employed, the temperature is practically uniform throughout the melting chamber. Temperature measurements through refractory walls showed that at steel-making temperatures (2700-3000 deg. Fahr.), thick, insulated walls have practically the same inside surface temperatures as thin, air-cooled or water-cooled walls in the same furnace. An insulated wall can, however, be overheated and fused more easily, due to less heat losses and flatter temperature gradients through the wall section.

The Hudson Valley Coke & Products Corporation, of which E. Arthur Tutein, Inc., Boston, New York and Philadelphia, is sales agent, has invited foundrymen to inspect its new blast furnace and by-product coke plant at Troy, N. Y., Saturday, June 5. A program has been arranged providing for the entertainment of guests throughout the day. Casts will be made at the furnace both in the morning and the afternoon.

Iron and Steel Markets

Pig Iron and Steel Output Less

Nine Blast Furnaces Go Out in May—Bars and Pipe Most Active of Steel Products—No Bonus on German Pig Iron—Smaller Decline in Unfilled Orders

MAY pig iron production, compiled from reports telegraphed on June 1, shows the expected slight decline from the daily average for April, and points to some decrease in the daily rate of steel ingot output in the May statistics which will appear next week.

For the 31 days of May the pig iron total was 3,481,428 tons, or 112,304 tons a day, which compares with a daily rate of 115,004 tons and a total of 3,450,122 tons in the 30 days of April.

Excepting that of April, last month's daily rate was the highest in 14 months, March, 1925, showing 114,975 tons. Thus the greater steadiness of the industry this year appears in a drop of but 2.3 per cent in daily output last month, whereas May, 1925, fell off 13 per cent from the previous month.

That the steel companies are planning for some further, though not marked, reduction in steel works schedules in June appears from the putting out of 3 Steel Corporation and 6 independent blast furnaces last month. The capacity of the 228 furnaces in blast June 1 was 110,600 tons a day, against 115,150 tons a day for 237 furnaces one month previous.

Bars and pipe, particularly oil and gas well and line pipe, are the most active of finished steel lines. The Steel Corporation's advance of $2 from the 1.90c. basis for steel bars followed the closing of considerable business at the lower price, and the latter has been made to apply by several mills to June specifications on second quarter contracts. While transactions at both 1.90c. and 2c. have been reported in the week, most of the larger producers now quote the latter price on new inquiries.

In trade opinion the result of the effort to advance bars will determine the possibility of a like attempt in plates and structural shapes. Something will depend also on the promptness with which mills adjust operations to any change in demand.

June opens with rolling mill schedules substantially the same as for the last ten days of May. In the case of the Steel Corporation, incoming business for the past week has been well above that of the final week in April, indicating that last month's decline in unfilled orders will be 40 to 50 per cent less than the 512,000 tons of April. In May, 1925, the loss was nearly 400,000 tons and in May, 1924, 580,000 tons.

One automobile company at Detroit has made a round purchase of sheets and cold-rolled strip steel for third quarter, and another has covered for part of its requirements. Generally both car builders and makers of parts are holding down inventories.

Prominent in the week's structural awards of 35,000 tons are a bridge at Bath, Me., taking 7600 tons, two projects in New York totaling 8000 tons, and a pipe line for the Philippine Islands, 3200 tons of plates.

For harbor work at Maracaibo, Venezuela, 1250 tons of reinforcing bars will be furnished by an American jobber.

The Louisville & Nashville has ordered 32 locomotives and the Illinois Central 20. Alabama and Colorado rail mills divide the Southern Pacific order for 28,000 tons of rails.

Buying of 30,000 tons of foundry pig iron at Pittsburgh, for sanitary work brought a decline of 50c. in that market. In Cincinnati continued competition between Ohio River and Lake Erie furnaces resulted in a like recession. Other pig iron centers showed little activity, though the melt of foundry iron was generally maintained in May.

Sales reported by the Foundry Equipment Manufacturers' Association in the first four months of the year were 22 per cent greater than in the corresponding period of 1925.

While the Treasury Department has made no formal ruling withdrawing pig iron from the list of German iron and steel products on which countervailing duties have been ordered, it is found that no pig iron bonuses have been paid in Germany. Modification of the order is expected, therefore. Leading makers of German steel products are sending representatives to this country with a view to securing other exemptions.

The chief point made is that the German bonuses apply not to exports of iron and steel as such, but to the exported products of metal-working industries which are buyers of German iron and steel.

Rapid paralysis of industry in Great Britain by the coal strike appears from the drop in active blast furnaces from 147 at the end of April to 15 on May 31, and 14 of these in Scotland. Complete suspension is likely. There has been larger buying of coal in the United States, particularly for British gas works. In the past week sales of 200,000 tons are reported for shipment from Baltimore and Hampton Roads.

Despite the 50c. decline in foundry pig iron in the Pittsburgh and Southern Ohio districts, there was no quotable change in the four market centers represented in THE IRON AGE pig iron composite price, consequently the composite remains at $20.04, the low point of the year.

For finished steel the composite price has advanced to 2.410c. per lb., from 2.403c. last week This compares with 2.460c. one year ago.

A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics
At Date, One Week, One Month, and One Year Previous

For Early Delivery

Pig Iron, Per Gross Ton:	June 1, 1926	May 25, 1926	May 4, 1926	June 2, 1925
No. 2X, Philadelphia‡	$22.76	$22.76	$23.26	$21.26
No. 2, Valley Furnace†	*18.00*	18.50	19.00	18.50
No. 2, Southern, Cin'ti†	25.69	25.69	25.69	24.05
No. 2, Birmingham, Ala.†	22.00	22.00	22.00	20.00
No. 2 foundry, Chicago*	21.50	21.50	22.00	20.50
Basic, del'd, eastern Pa.	21.75	21.75	21.75	21.50
Basic, Valley furnace	18.00	18.00	18.50	18.25
Valley Bessemer del. P'gh.	20.76	20.76	21.26	20.76
Malleable, Chicago*	21.50	21.50	22.00	20.50
Malleable, Valley	18.50	18.50	19.00	18.50
Gray forge, Pittsburgh	*19.26*	19.76	20.26	19.76
L. S. charcoal, Chicago	29.04	29.04	29.04	29.04
Ferromanganese, furnace	88.00	88.00	88.00	115.00
Rails, Billets, etc., Per Gross Ton:				
O.-h. rails, heavy, at mill	$43.00	$43.00	$43.00	$43.00
Light rails at mill	34.00	34.00	32.00	38.08
Bess. billets, Pittsburgh	35.00	35.00	35.00	35.00
O.-h. billets, Pittsburgh	35.00	35.00	35.00	35.00
O.-h. sheet bars, P'gh	36.00	36.00	36.00	35.00
Forging billets, base, P'gh	40.00	40.00	40.00	40.00
O.-h. billets, Phila	40.30	40.30	40.30	40.17
Wire rods, Pittsburgh	45.00	45.00	45.00	46.00
	Cents	Cents	Cents	Cents
Skelp, gr. steel, P'gh, lb.	1.90	1.90	1.90	2.00
Finished Iron and Steel, *Per Lb. to Large Buyers:*	Cents	Cents	Cents	Cents
Iron bars, Philadelphia	2.22	2.22	2.22	2.22
Iron bars, Chicago	2.00	2.00	2.00	2.05
Steel bars, Pittsburgh	**2.00**	1.90	2.00	2.00
Steel bars, Chicago	2.10	2.10	2.10	2.10
Steel bars, New York	**2.34**	2.24	2.34	2.34
Tank plates, Pittsburgh	1.85	1.85	1.90	2.00
Tank plates, Chicago	2.10	2.10	2.10	2.20
Tank plates, New York	2.24	2.24	2.24	2.24
Beams, Pittsburgh	1.90	1.90	1.90	2.00
Beams, Chicago	2.10	2.10	2.10	2.20
Beams, New York	2.24	2.24	2.24	2.34
Steel hoops, Pittsburgh	2.50	2.50	2.50	2.40

*The average switching charge for delivery to foundries in the Chicago district is 61c. per ton.
†Silicon, 1.75 to 2.25. ‡Silicon, 2.25 to 2.75.

Sheets, Nails and Wire, *Per Lb. to Large Buyers:*	June 1, 1926 Cents	May 25, 1926 Cents	May 4, 1926 Cents	June 2, 1925 Cents
Sheets, black, No. 28, P'gh.	*3.10*	3.15	3.25	3.20
Sheets, black, No. 28, Chicago dist. mill	*3.30*	3.35	3.35	3.40
Sheets, galv., No. 28, P'gh.	*4.30*	4.40	4.50	4.25
Sheets, galv., No. 28, Chicago dist. mill	4.60	4.60	4.70	4.50
Sheets, blue, 9 & 10, P'gh.	*2.35*	2.40	2.40	2.35
Sheets, blue, 9 & 10, Chicago dist. mill	2.60	2.60	2.60	2.50
Wire nails, Pittsburgh	2.65	2.65	2.65	2.70
Wire nails, Chicago dist. mill	2.70	2.70	2.70	2.85
Plain wire, Pittsburgh	2.50	2.50	2.50	2.50
Plain wire, Chicago dist. mill	2.55	2.55	2.55	2.60
Barbed wire, galv., P'gh.	3.35	3.35	3.35	3.45
Barbed wire, galv., Chicago dist. mill	3.40	3.40	3.40	3.55
Tin plate, 100 lb. box, P'gh	$5.50	$5.50	$5.50	$5.50
Old Material, Per Gross Ton:				
Carwheels, Chicago	$15.00	$15.00	$15.50	$16.75
Carwheels, Philadelphia	17.00	17.00	17.50	17.00
Heavy steel scrap, P'gh.	*15.00*	15.50	16.00	17.50
Heavy steel scrap, Phila.	15.00	15.00	15.50	15.00
Heavy steel scrap, Chicago	12.00	12.00	12.25	16.00
No. 1 cast, Pittsburgh	*16.00*	16.50	16.50	17.50
No. 1 cast, Philadelphia	17.00	17.00	17.50	17.50
No. 1 cast, Ch'go (net ton)	15.75	15.75	16.00	17.50
No. 1 RR. wrot, Phila.	17.00	17.00	17.50	17.50
No. 1 RR. wrot. Ch'go (net)	10.50	10.50	11.25	14.50
Coke, Connellsville, Per Net Ton at Oven:				
Furnace coke, prompt	**$3.00**	$2.85	$3.00	$2.85
Foundry coke, prompt	4.00	4.00	4.00	4.00
Metals, *Per Lb. to Large Buyers:*	Cents	Cents	Cents	Cents
Lake copper, New York	14.00	14.00	14.00	13.62½
Electrolytic copper, refinery	13.57½	13.57½	13.62½	13.37½
Zinc, St. Louis	6.95	6.85	6.70	7.05
Zinc, New York	**7.30**	7.20	7.05	7.40
Lead, St. Louis	**7.45**	7.40	7.60	8.25
Lead, New York	7.65	7.65	7.85	8.60
Tin (Straits), New York	*60.62½*	61.00	63.25	54.87½
Antimony (Asiatic), N. Y.	9.50	9.50	12.50	17.00

On export business there are frequent variations from the above prices. Also, in domestic business, there is at times a range of prices on various products, as shown in our market reports on other pages.

Pittsburgh

Advance in Bars Is General — Valley Foundry Iron Drops 50c.

PITTSBURGH, June 1.—A further drop of 50c. a ton in the price of foundry iron to $18, Valley furnace, for No. 2 grade on a sale of 30,000 tons for last half shipment to a sanitary ware manufacturer; increased weakness in the sheet market, and general adoption by independent manufacturers of the recent advance in steel bars by the Steel Corporation, stand out among the developments of the past week. The advance to a base of 2c. on bars did not become effective with some of the independents until last Saturday, but all are now at that price and seemingly have secured a sufficient complement of orders to take a firmer stand. The significance of the advance is that it was initiated by the Steel Corporation, which in recent years has been disposed to follow, rather than lead, in price changes.

The fact that the steel industry at large is earning such a comparatively low rate on its investment is expected soon to find reflection in an effort to get the prices of other products which are considered too low to a more remunerative level. Sheets are said to be in that category, but plates and shapes are mentioned more frequently as likely to move upward in the near future. The sheet market is so unsettled that many manufacturers find it difficult to ascertain just where the market is, except so far as their own companies are concerned.

The last week of May, in a general way, has not been productive of marked changes in the steel situation. General business probably has increased slightly, but there has been no change worthy of note in the rate of plant operations. Pipe, particularly for oil and gas well use and for pipe lines, still stands out as the most active product in the market. Railroad buying of rolling stock is lacking, but there is enough demand for rails and track accessories to give a fair amount of satisfaction. Reports about demands from the automotive industry vary, but on the whole suggest a continued desire on the part of builders and parts makers to avoid large inventories.

The tin plate market has lost some of its activity in that consumers are well supplied and lately have not been specifying freely enough to make necessary quite as heavy a production as the mills recently were getting out. The American Sheet & Tin Plate Co. has made no announcement about tin plate prices for the third quarter and last half of the year and seems to have abandoned, temporarily, at least, the policy of formal price announcements unless a change is to be made in the price.

Pig Iron.—Last week's recession in pig iron prices failed to establish a bottom, as the Standard Sanitary Mfg. Co. late last week bought between 25,000 and 30,000 tons of foundry iron for its Pittsburgh and New

Brighton, Pa., plants for shipment over the last half of this year, and developed a price of $18, Valley Furnace, from at least three producers. This represents a further drop of 50c. a ton and carries the market back to the low point of just about a year ago. Except for this transaction, the recent recession in prices has been ineffective as a business stimulus. Possibly at $18 for No. 2 foundry, there will be a demand based on the fact that iron is really cheap at that figure, but so far as actual requirements of melters are concerned, it is doubtful if price alone would be the principal factor. It has been frequently commented upon that the Pittsburgh-Valley market is always the first to go down in a period of depression and the last to rise when the market turns upward. The reason is to be found in the fact that there is too much merchant capacity for the requirements of the district. At present prices, few, if any, of the merchant furnaces can produce at a profit, and it is probable that with the principal merchant grade at $18, a curtailment of production will prove necessary. A sale of 1000 tons of Bessemer iron was noted at $19, Valley furnace. No business of importance has been done in basic iron, and sales of foundry grade outside of the one referred to, have been in single carloads. W. P. Snyder & Co. make the average price of Bessemer iron from Valley furnaces in May $19.359, and of basic, $18, against $19.617 and $18.90 respectively in April.

We quote Valley furnace, the freight rate for delivery to the Cleveland or Pittsburgh district being $1.76 per gross ton:

Basic	$18.00
Bessemer	19.00
Gray forge	$17.50 to 18.00
No. 2 foundry	18.00 to 18.50
No. 3 foundry	17.50 to 18.00
Malleable	18.50
Low phosphorus, copper free	27.50

Ferroalloys.—Strictly new business in the more commonly used ferroalloys is limited. There is some second-half contracting in spiegeleisen, and a few consumers who did not cover for the year in 50 per cent ferrosilicon also are protecting themselves against their requirements over the last half of the year. In both cases, prices ruling for the first half of the year prevail. Specifications against contracts for ferromanganese are being made steadily, but there is no new business. Prices are given on page 1607.

Semi-Finished Steel.—This market is quiet, but prices are holding. The demand is light entirely because the operations of sheet and strip mills, the chief outlets for commercial billets, slabs and sheet bars are at a rather low rate and it is doubted that lower prices would create business. Lower prices for sheet bars would only serve to intensify an already weak sheet market and the present aim of important sheet producers, who in most cases, are producers of sheet bars for market, is to bring about stability. The tendency seems to be to curtail production rather than to seek operations at the expense of prices. Wire rods also are holding at recent prices, although real activity is lacking. Prices are given on page 1607.

Wire Products.—Jobbers' sales are running heavier than they did recently, and that development is finding reflection in the demands coming to the mills from jobbers. The latter have been allowing the mills to carry the stocks and find it necessary with any quickening in sales to order more freely. Mill stocks seem ample to meet the larger requirements, however, as there has been no enlargement of mill operations. Prices are holding very steadily at recent levels, and it is the report of jobbers that concessions no longer are being offered even on desirable orders. Prices are given on page 1605.

Rails and Track Supplies.—Railroads served by local mills seem to have bought all of their 1926 requirements in standard-section rails late last year, but nationally the rail market is rather active for the time of year, notably in the South, where the railroads continue to buy. In the track accessories the market here is better than it has been, due to some supplementary purchases of tie plates and spikes by several roads which did not cover their full requirements in early orders. Prices of small spikes below $2.90, base, per 100 lb., seem to have disappeared. Light rails are not selling very freely, but makers are making a stand at $34 per gross ton for billet rails. Prices are given on page 1605.

Tubular Goods.—In spite of the fact that oil production has increased to a point hitherto regarded as dangerous to price maintenance, the demand for oil country pipe remains strong, and on the popular sizes of casing several makers now are unable to promise better than four weeks' delivery. Mill backlogs in line pipe are even more extensive, and on the large sizes there are some makers who have enough business to keep them busy through the summer. Jobbers are moving a good deal of standard pipe and, having very moderate stocks, are making constant demands on makers, in all cases asking for prompt delivery. Present pipe discounts have been in effect since the early part of 1923, and while there have been deviations from time to time, the price situation at present is very steady. Welded boiler tube business leaves much to be desired both as to prices and demands. Discounts are given on page 1605.

Bolts, Nuts and Rivets.—There is still a downward trend in bolt and nut bookings and increased sales effort is necessary to bring out a reasonably steady flow of orders, but there are no indications that prices are being disturbed to produce that result. Rivets also are slow. While large rivets are regularly quoted at $2.60, base, per 100 lb., fair-sized lots for early delivery are moving at lower prices. Discounts and prices are given on page 1607.

Fluorspar.—There is a fairly steady demand for domestic gravel spar, and except on a few lots of size, the ruling price is $18 per net ton at mines. The minimum price on 85 and 5 per cent material is $17.50 and that price usually is to consumers whose requirements

THE IRON AGE Composite Prices

Finished Steel

June 1, 1926, 2.410c. Per Lb.

One week ago	2.403c.
One month ago	2.439c.
One year ago	2.460c.
10-year pre-war average	1.689c.

Based on prices of steel bars, beams, tank plates, plain wire, open-hearth rails, black pipe and black sheets. These products constitute 88 per cent of the United States output of finished steel.

	High		Low	
1926	2.453c.,	Jan. 5;	2.403c.,	May 18
1925	2.560c.,	Jan. 6;	2.396c.,	Aug. 18
1924	2.789c.,	Jan. 15;	2.460c.,	Oct. 14
1923	2.824c.,	April 24;	2.446c.,	Jan. 2

Pig Iron

June 1, 1926, $20.04 Per Gross Ton

One week ago	$20.04
One month ago	20.46
One year ago	19.42
10-year pre-war average	15.72

Based on average of basic and foundry irons, the basic being Valley quotation, the foundry an average of Chicago, Philadelphia and Birmingham.

	High		Low	
1926	$21.54,	Jan. 5;	$20.04,	May 25
1925	22.50,	Jan. 13;	18.96,	July 7
1924	22.88,	Feb. 26;	19.21,	Nov. 3
1923	30.86,	March 20;	20.77,	Nov. 20

Mill Prices of Finished Iron and Steel Products

Iron and Steel Bars

Soft Steel

	Base Per Lb.
F.o.b. Pittsburgh mills	2.00c. to 2.10c.
F.o.b. Chicago	2.10c. to 2.20c.
Del'd Philadelphia	2.22c. to 2.32c.
Del'd New York	2.24c. to 2.34c.
Del'd Cleveland	2.19c.
F.o.b. Birmingham	2.15c. to 2.25c.
C.i.f. Pacific ports	2.35c.
F.o.b. San Francisco mills	2.35c. to 2.40c.

Billet Steel Reinforcing

F.o.b. Pittsburgh mills	2.00c. to 2.10c.

Rail Steel

F.o.b. mill	1.80c. to 1.90c.
F.o.b. Chicago	1.90c. to 2.00c.

Iron

Common iron, f.o.b. Chicago	2.00c.
Refined iron, f.o.b. P'gh mills	3.00c.
Common iron, del'd Philadelphia	2.22c.
Common iron, del'd New York	2.24c.

Tank Plates

	Base Per Lb.
F.o.b. Pittsburgh mill	1.85c. to 1.90c.
F.o.b. Chicago	2.10c.
F.o.b. Birmingham	2.05c. to 2.15c.
Del'd Cleveland	2.09c.
Del'd Philadelphia	2.17c. to 2.22c.
Del'd New York	2.19c. to 2.24c.
C.i.f. Pacific ports	2.25c. to 2.30c

Structural Shapes

	Base Per Lb.
F.o.b. Pittsburgh mill	1.90c.
F.o.b. Chicago	2.10c.
F.o.b. Birmingham	2.05c. to 2.15c.
Del'd Cleveland	2.09c. to 2.19c.
Del'd Philadelphia	2.12c. to 2.22c.
Del'd New York	2.14c. to 2.24c.
C.i.f. Pacific ports	2.30c. to 2.35c.

Hot-Rolled Flats (Hoops, Bands and Strips)

	Base Per Lb.
All gages, narrower than 6 in., P'gh	2.50c.
All gages, 6 in. and wider, P'gh	2.30c.
All gages, 6 in. and narrower, Chicago	2.60c.
All gages, wider than 6 in., Chicago	2.50c.

Cold-Finished Steel

	Base Per Lb.
Bars, f.o.b. Pittsburgh mills	2.50c.
Bars, f.o.b. Chicago	2.50c.
Bars, Cleveland	2.55c.
Shafting, ground, f.o.b. mill	*2.70c. to 3.00c.
Strips, f.o.b. Pittsburgh mills	3.75c.
Strips, f.o.b. Cleveland mills	3.75c.
Strips, delivered Chicago	4.05c.
Strips, f.o.b. Worcester mills	4.05c.

*According to size.

Wire Products

(To jobbers in car lots f.o.b. Pittsburgh and Cleveland)

	Base Per Keg
Wire nails	$2.65
Galv'd nails, 1-in. and longer	4.65
Galv'd nails, shorter than 1 in.	4.90
Galvanized staples	3.35
Polished staples	3.10
Cement coated nails	2.65

	Base Per 100 Lb.
Bright plain wire, No. 9 gage	$2.50
Annealed fence wire	2.65
Spring wire	3.50
Galv'd wire, No. 9	3.10
Barbed wire, galv'd	3.35
Barbed wire, painted	3.10

Chicago district mill and delivered Chicago prices are $1 per ton above the foregoing. Birmingham mill prices $3 a ton higher; Worcester, Mass., mill $3 a ton higher on production of that plant; Duluth, Minn., mill $2 a ton higher; Anderson, Ind., $1 higher.

Woven Wire Fence

	Base to Retailers Per Net Ton
F.o.b. Pittsburgh	$65.00
F.o.b. Cleveland	65.00
F.o.b. Anderson, Ind.	66.00
F.o.b. Chicago district mills	67.00
F.o.b. Duluth	68.00
F.o.b. Birmingham	68.00

Sheets

Blue Annealed

	Base Per Lb.
Nos. 9 and 10, f.o.b. Pittsburgh	2.30c. to 2.40c.
Nos. 9 and 10, f.o.b. Ch'go dist. mills	2.60c.
Nos. 9 and 10, del'd Philadelphia	2.72c.

Box Annealed, One Pass Cold Rolled

No. 28, f.o.b. Pittsburgh	3.05c. to 3.15c.
No. 28, f.o.b. Ch'go dist. mill	3.30c. to 3.45c.
No. 28, del'd Philadelphia	3.47c. to 3.57c.

Galvanized

No. 28, f.o.b. Pittsburgh	4.30c. to 4.40c.
No. 28, f.o.b. Chicago dist. mills	4.60c. to 4.70c.
No. 28, del'd Philadelphia	4.72c.

Tin Mill Black Plate

No. 28, f.o.b. Pittsburgh	3.15c. to 3.25c.
No. 28, f.o.b. Chicago dist. mill	3.45c.

Automobile Body Sheets

No. 22, f.o.b. Pittsburgh	4.20c. to 4.30c.

Long Ternes

No. 28, 8-lb. coating, f.o.b. mill	4.75c. to 4.85c.

Tin Plate

	Per Base Box
Standard cokes, f.o.b. P'gh district mills	$5.50
Standard cokes, f.o.b. Gary and Elwood, Ind.	5.60

Terne Plate

(*F.o.b. Morgantown or Pittsburgh*)

(Per package, 20 x 28 in.)

8-lb. coating, 100 lb. base	$11.40
8-lb. coating I.C.	11.70
15-lb. coating I.C	14.85
20-lb. coating I.C.	$16.20
25-lb. coating I.C.	17.90
30-lb. coating I.C.	19.45
40-lb. coating I.C.	21.65

Alloy Steel Bars

(F.o.b. Pittsburgh or Chicago)

S. A. E. Series Numbers	Base Per 100 Lb.
2100* (1½% Nickel, 0.10% to 0.20% Carbon)	$3.20 to $3.25
2300 (3½% Nickel)	4.40 to 4.50
2500 (5% Nickel)	5.70 to 5.80
3100 (Nickel Chromium)	3.40 to 3.50
3200 (Nickel Chromium)	5.00 to 5.25
3300 (Nickel Chromium)	7.00 to 7.25
3400 (Nickel Chromium)	6.25 to 6.50
5100 (Chromium Steel)	3.40 to 3.50
5200* (Chromium Steel)	7.00 to 7.50
6100 (Chrom. Vanadium bars)	4.30
6100 (Chrom. Vanad. spring steel)	3.80
9250 (Silicon Manganese spring steel)	3.20 to 3.25
Carbon Vanadium (0.45% to 0.55% Carbon, 0.15% Vanad.)	4.10 to 4.20
Nickel Chrome Vanadium (0.60 Nickel, 0.50 Chrom., 0.15 Vanad.)	4.30
Chromium Molybdenum bars (0.80—1.10 Chrom., 0.25—0.40 Molyb.)	4.25 to 4.35
Chromium Molybdenum bars (0.50—0.70 Chrom., 0.15—0.25 Molyb.)	3.40 to 3.50
Chromium Molybdenum spring steel (1 — 1.25 Chrom., 0.30 — 0.50 Molybdenum)	4.50 to 4.75

Above prices are for hot-rolled steel bars, forging quality. The ordinary differential for cold-drawn bars is 1c. per lb. higher. For billets 4 x 4 to 10 x 10 in. the price for a gross ton is the net price for bars of the same analysis. For billets under 4 x 4 in. down to and including 2½-in. squares, the price is $5 a gross ton above the 4 x 4 billet price.

*Not S. A. E. specifications, but numbered by manufacturers to conform to S. A. E. system.

Rails

	Per Gross Ton
Standard, f.o.b. mill	$43.00
Light (from billets), f.o.b. mill	34.00
Light (from rail steel), f.o.b. mill	32.00
Light (from billets), f.o.b. Ch'go mill	$36.00 to 38.00

Track Equipment

(F.o.b. Mill)

	Base Per 100 Lb.
Spikes, ⅜ in. and larger	$2.80 to $3.00
Spikes, ½ in. and smaller	2.90 to 3.25
Spikes, boat and barge	3.25
Track bolts, all sizes	4.00 to 4.50
Tie plates, steel	2.25 to 2.35
Angle bars	2.75

Welded Pipe

Base Discounts, f.o.b. Pittsburgh District and Lorain, Ohio, Mills

Butt Weld

Steel (inches)	Black	Galv.	Iron (inches)	Black	Galv.
⅛	45	19½	⅛ to ⅜	+11	+39
¼ to ⅜	51	25½	½	22	2
½	56	42½	¾	28	11
¾	60	48½	1 to 1½	30	12
1 to 3	62	50½			

Lap Weld

2	55	43½	2	23	7
2½ to 6	59	47½	2½	26	11
7 and 8	56	43½	3 to 6	28	13
9 and 10	54	41½	7 to 12	26	11
11 and 12	53	40½			

Butt Weld, extra strong, plain ends

⅛	41	24½	⅛ to ⅜	+19	+54
¼ to ⅜	47	30½	½	21	7
½	53	42½	¾	28	12
¾	58	47½	1 to 1½	30	14
1 to 1½	60	49½			
2 to 3	61	50½			

Lap Weld, extra strong, plain ends

2	53	42½	2	23	9
2½ to 4	57	46½	2½ to 4	29	15
4½ to 6	56	45½	4½ to 6	28	14
7 to 8	52	39½	7 to 8	21	7
9 and 10	45	32½	9 to 12	16	2
11 and 12	44	31½			

To the large jobbing trade the above discounts on steel pipe are increased on black by one point, with supplementary discount of 5%, and on galvanized by 1½ points, with supplementary discount of 5%. On iron pipe, both black and galvanized, the above discounts are increased to large jobbers by one point with supplementary discounts of 5 and 2½%.

Note.—Chicago district mills have a base two points less than the above discounts. Chicago delivered base is 2½ points less. Freight is figured from Pittsburgh, Lorain, Ohio, and Chicago district mills, the billing being from the point producing the lowest price to destination.

Boiler Tubes

Base Discounts, f.o.b. Pittsburgh

Lap Welded Steel		Charcoal Iron	
2 to 2¼ in.	27	1½ in.	+18
2½ to 2¾ in.	37	1¾ to 1⅞ in.	+ 8
3 in.	40	2 to 2¼ in.	— 2
3¼ to 3¾ in.	42½	2½ to 3 in.	— 7
4 to 13 in.	46	3¼ to 4½ in.	— 9

Beyond the above discounts, 5 to 7 fives extra are given on lap welded steel tubes and 2 tens to 2 tens and 1 five on charcoal iron tubes.

Standard Commercial Seamless Boiler Tubes

Cold Drawn

1 in.	60	3 in.	45
1¼ to 1½ in.	52	3¼ to 3½ in.	47
1¾ in.	36	4 in.	50
2 to 2¼ in.	31	4½, 5 and 6 in.	45
2½ to 2¾ in.	39		

Hot Rolled

2 and 2¼ in.	34	3½ and 3½ in.	50
2½ and 2¾ in.	42	4 in.	53
3 in.	48	4½, 5 and 6 in.	48

Less carloads, 4 points less. Add $8 per net ton for more than four gages heavier than standard. No extra for lengths up to and including 24 ft. Sizes smaller than 1 in. and lighter than standard gage to be held at mechanical tube list and discount. Intermediate sizes and gages not listed take price of next larger outside diameter and heavier gage.

Seamless Mechanical Tubing

	Per Cent Off List
Carbon, 0.10% to 0.30%, base	55
Carbon, 0.30% to 0.40%, base	50

Plus differentials for lengths over 18 ft. and for commercially exact lengths. Warehouse discounts on small lots are less than the above.

are large enough to create keen competition among producers.

Steel and Iron Bars.—Independent makers of steel bars have generally advanced prices $2 a ton to 2c., base, for lots of 100 tons, or more, and to 2.10c., base, for smaller lots, following the advance announced by the Steel Corporation, effective May 26. An opportunity, however, was afforded buyers of the larger tonnages to enter orders at 1.90c. before the advance became effective. All mills are now fairly well supplied with business and are firm at the new levels. Iron bars are still quotable at 3c., base, Pittsburgh, for refined iron, but this is strictly a small-lot price and would be shaded on desirable orders.

Structural Steel.—The ruling price on large structural shapes still is 1.90c., base, Pittsburgh, but an impression is gaining ground that a move similar to that in steel bars is likely in the next few weeks. Although the national market for fabricated steel is active, Pittsburgh shops are completing more business than they are getting.

Plates.—It is expected here that plates will be among the products on which mills will next attempt to obtain more remunerative prices. A price of 1.90c., base, Pittsburgh, on ordinary tonnages, it is said, is neither satisfactory nor profitable, and even at present there is a tendency to increase the size of an order that can be placed at 1.85c., base, Pittsburgh. There are about 1500 tons of plates and small shapes in 13 barges to be placed June 2 by the United States engineers, Memphis, Tenn., and Cox & Stevens, New York naval architects, are expected to put out a formal inquiry in the next few days for 15 barges for the upper Mississippi River barge line, calling for about 1500 tons of plates and small shapes.

Sheets.—Viewed either from the angle of business or prices, the situation is even worse than it has been. Prices continue to weaken under the competition for orders and apparently no more business is developing than would come out at sustained prices. Considerable uncertainty exists among manufacturers as to exactly where the market is on the various grades, but most of the sales of black sheets are at prices ranging from 3c. to 3.15c., of galvanized from 4.30c. to 4.40c. and of blue annealed 2.35c. to 2.40c. The American Sheet & Tin Plate Co. is meeting the higher quotations, but has made no formal reduction in prices and still is getting orders against contracts carrying higher prices. Automobile body sheets are openly quoted by several makers at 4.20c. base, Pittsburgh, and long ternes, which up to this time seem to have escaped the general weakness, have eased off about $2 a ton. Today's minimum prices are regarded as below the cost of production, but seemingly the desire for mill engagement is stronger than for profits. The general average of sheet mill operations still is around 60 per cent of capacity. Prices are given on page 1605.

Tin Plate.—Mill operations are somewhat lighter than recently, because heavy shipments over the past six months have very well supplied the makers of perishable food containers and there is a natural pause in buying against third quarter requirements until crop news is of a more definite character. The American Sheet & Tin Plate Co. has adopted a plan of announcing prices only when there is a change. Having made no formal announcement, the present price of $5.50 per base box, Pittsburgh, for standard coke, must be regarded as its price on third-quarter and last-half tonnages.

Cold-Finished Steel Bars.—The automobile parts makers are taking cold-finished steel bars only as they are wanted, and at the moment they do not seem to want very large quantities. Other consuming industries are buying sparingly, but the market is holding well as to prices in spite of the dullness.

Hot-Rolled Flats.—There seems to be a little more interest in strips, but the general report is that May business fell well behind that of the month before. Prices are holding on strips and also on hoops and bands. They are given on page 1605.

Cold-Rolled Strips.—The market lacks activity, but most makers still are holding firmly to 3.75c., base, Pittsburgh.

Coke and Coal.—The past week has brought about a somewhat stronger market in spot furnace coke, and recent buyers have found that as a result of a balancing of supply and demand, $3 per net ton at ovens is about as low as supplies are obtainable. Recently there were supplies as low at $2.85, but coke at that price is hardly of a quality that the average pig iron producer could use. Spot foundry coke is selling steadily at recent prices. There is still plenty of coal at recent prices. The market seems to have reached a point where it cannot decline further.

Old Material.—The scrap market does not yet appear to have struck a bottom. Heavy melting steel now is fairly quotable at $15 to $15.50, a drop of $4 per ton from the high point of the early part of the year and the lowest price that has ruled since the latter part of 1923. An Ohio River steel maker since a week ago took between 5000 and 10,000 tons of that grade, paying $15.50. As this purchase supplied the immediate requirements of that consumer, there is not now a mill in this district that is in the market. Dealers are able to buy this grade at $15, and the quotable market thus becomes $15 to $15.50, based on the sale referred to and the fact that any scrap that might be offered would have to find its outlet to dealers at their prices. Other steel works grades reflect the tendency in heavy melting steel, and in the foundry grades and special purpose scrap there is not enough demand to enable dealers to get recent prices. The Pennsylvania Railroad scrap list for this month amounts to about 47,000 net tons.

We quote for delivery to consumer's mill in the Pittsburgh and other districts taking the Pittsburgh freight rate as follows:

	Per Gross Ton	
Heavy melting steel	$15.00 to	$15.50
No. 1 cast, cupola size	16.00 to	16.50
Rails for rolling, Newark and Cambridge, Ohio; Cumberland, Md.; Huntington, W. Va., and Franklin, Pa.	17.50 to	18.00
Compressed sheet steel	14.00 to	14.50
Bundled sheets, sides and ends	13.00 to	13.50
Railroad knuckles and couplers	17.50 to	18.00
Railroad coil and leaf springs	17.50 to	18.00
Low phosphorus blooms and billet ends	20.00 to	20.50
Low phosphorus plates and other material	18.50 to	19.00
Low phosphorus punchings	18.50 to	19.00
Steel car axles	20.50 to	21.00
Cast iron wheels	17.00 to	17.50
Rolled steel wheels	17.50 to	18.00
Machine shop turnings		11.00
Short shoveling turnings		11.50
Sheet bar crops	17.50 to	18.00
Heavy steel axle turnings	15.00 to	15.50
Short mixed borings and turnings		11.50
Heavy breakable cast	14.50 to	15.00
Cast iron borings		11.50
No. 1 railroad wrought	11.50 to	12.00
No. 2 railroad wrought	15.00 to	15.50
Malleable scrap	16.00 to	16.50

Warehouse Prices, f.o.b. Pittsburgh

	Base per Lb.
Tank plates	3.00c.
Structural shapes	3.00c.
Soft steel bars and small shapes	2.90c.
Reinforced steel bars	2.90c.
Black sheets (No. 28 gage), 25 or more bundles	4.10c.
Galvanized sheets (No. 28 gage), 25 or more bundles	5.15c.
Blue annealed sheets (No. 10 gage), 25 or more sheets	3.55c.
Cold-finished shafting and screw stock—	
Rounds and hexagons	3.60c.
Squares and flats	4.10c.
Bands	3.60c.
Spikes, large	3.30c.
Small	3.80c. to 5.25c.
Boat	3.80c.
Bolts, track	4.90c.
Wire, black soft annealed, base per 100 lb.	$3.00
Wire, galvanized soft, base per 100 lb.	3.00
Common wire nails, per keg	3.00
Cement coated nails	3.05

Of the 42,000,000 persons gainfully employed in the United States, 25,000,000 are handicapped by defective vision or eye strain, said G. A. Henry, director of the Eyesight Conservation Council of America, New York, in addressing the Illuminating Engineering Society of Boston, May 29. In industry the management which neglects illumination neglects its own interests. Inadequate light means unnecessary fatigue and inefficiency; poor light means poor work, he said.

Semi-Finished Steel, Raw Materials, Bolts and Rivets

Mill Prices of Semi-Finished Steel

F.o.b. Pittsburgh or Youngstown

Billets and Blooms

	Per Gross Ton
Rolling, 4-in. and over	$35.00
Rolling, 2-in. and smaller	36.00
Forging, ordinary	40.00
Forging, guaranteed	45.00

Sheet Bars

	Per Gross Ton
Open-hearth or Bessemer	$36.00

Slabs

	Per Gross Ton
8 in. x 2 in. and larger	$35.00
6 in. x 2 in. and smaller	36.00

Skelp

	Per Lb.
Grooved	1.90c.
Sheared	1.90c.
Universal	1.90c.

Wire Rods

	Per Gross Ton
*Common soft, base	$45.00
Screw stock	$5.00 per ton over base
Carbon 0.20% to 0.40%	3.00 per ton over base
Carbon 0.41% to 0.55%	5.00 per ton over base
Carbon 0.56% to 0.75%	7.50 per ton over base
Carbon over 0.75%	10.00 per ton over base
Acid	15.00 per ton over base

*Chicago mill base is $46. Cleveland mill base, $45.

Prices of Raw Materials

Ores

Lake Superior Ores, Delivered Lower Lake Ports

	Per Gross Ton
Old range Bessemer, 51.50% iron	$4.55
Old range non-Bessemer, 51.50% iron	4.40
Mesabi Bessemer, 51.50% iron	4.40
Mesabi non-Bessemer, 51.50% iron	4.25
High phosphorus, 51.50% iron	4.15

Foreign Ore, c.i.f. Philadelphia or Baltimore

	Per Unit
Iron ore, low phos., copper free, 55 to 58% iron in dry Spanish or Algerian	9.50c. to 10c.
Iron ore, Swedish, average 66% iron	9.50c.
Manganese ore, washed, 51% manganese, from the Caucasus	42c.
Manganese ore, Brazilian or Indian, nominal	42c. to 44c.
Tungsten ore, high grade, per unit, in 60% concentrates	$11.50 to $12.00
	Per Ton
Chrome ore, Indian basic, 48% Cr_2O_3, crude, c.i.f. Atlantic seaboard	$22.00 to $23.00
	Per Lb.
Molybdenum ore, 85% concentrates of MoS_2, delivered	55c. to 60c.

Coke

	Per Net Ton
Furnace, f.o.b. Connellsville prompt	$3.00
Foundry, f.o.b. Connellsville prompt	$4.00 to 4.50
Foundry, by-product, Ch'go ovens	9.75
Foundry, by-product, New England, del'd	12.00
Foundry, by-product, Newark or Jersey City, delivered	9.75 to 10.77
Foundry, Birmingham	5.50 to 6.00
Foundry, by-product, St. Louis or Granite City	10.00

Coal

	Per Net Ton
Mine run steam coal, f.o.b. W. Pa. mines	$1.40 to $1.90
Mine run coking coal, f.o.b. W. Pa. mines	1.50 to 1.75
Mine run gas coal, f.o.b. Pa. mines	1.90 to 2.10
Steam slack, f.o.b. W. Pa. mines	1.30 to 1.40
Gas slack, f.o.b. W. Pa. mines	1.40 to 1.50

Ferromanganese

	Per Gross Ton
Domestic, 80%, furnace or seab'd.	$88.00 to $95.00
Foreign, 80%, Atlantic or Gulf port, duty paid	88.00

Spiegeleisen

	Per Gross Ton Furnace
Domestic, 19 to 21%	$32.00 to $34.00
Domestic, 16 to 19%	31.00 to 33.00

Electric Ferrosilicon

	Per Gross Ton Delivered
50%	$85.00 to $87.50
75%	145.00

Per Gross Ton Furnace		*Per Gross Ton Furnace*	
10%	$42.00	12%	$42.00
11%	42.00	14 to 16%	$45 to 46.00

Bessemer Ferrosilicon

F.o.b. Jackson County, Ohio, Furnace

Per Gross Ton		*Per Gross Ton*	
10%	$33.00	12%	$37.00
11%	35.00		

Silvery Iron

F.o.b. Jackson County, Ohio, Furnace

Per Gross Ton		*Per Gross Ton*	
6%	$25.50	10%	$31.00
7%	26.50	11%	33.00
8%	27.50	12%	35.00
9%	29.00		

Other Ferroalloys

Ferrotungsten, per lb. contained metal, del'd	$1.20
Ferrochromium, 4% carbon and up, 60 to 70% Cr., per lb. contained Cr. delivered	11.50c.
Ferrovanadium, per lb. contained vanadium, f.o.b. furnace	$3.25 to $4.00
Ferrocarbontitanium, 15 to 18%, per net ton, f.o.b. furnace, in carloads	$200.00
Ferrophosphorus, electric or blast furnace material, in carloads, 18%, Rockdale, Tenn., base, per net ton	$91.00
Ferrophosphorus, electric, 24%, f.o.b. Anniston, Ala., per net ton	$122.50

Fluxes and Refractories

Fluorspar

	Per Net Ton
Domestic, 85% and over calcium fluoride, not over 5% silica, gravel, f.o.b. Illinois and Kentucky mines	$17.50 to $18.00
No. 2 lump, Illinois and Kentucky mines	$20.00
Foreign, 85% calcium fluoride, not over 5% silica, c.i.f. Atlantic port, duty paid,	$17.25 to $17.75
Domestic, No. 1 ground bulk, 95 to 98% calcium fluoride, not over 2½% silica, f.o.b. Illinois and Kentucky mines	$32.50

Fire Clay

Per 1000 f.o.b. Works

	High Duty	Moderate Duty
Pennsylvania	$40.00 to $43.00	$38.00 to $40.00
Maryland	43.00 to 46.00	38.00 to 40.00
New Jersey	55.00 to 75.00	
Ohio	40.00 to 43.00	38.00 to 40.00
Kentucky	40.00 to 43.00	38.00 to 40.00
Illinois	40.00 to 43.00	35.00 to 38.00
Missouri	40.00 to 43.00	35.00 to 38.00
Ground fire clay, per ton		6.50 to 7.50

Silica Brick

	Per 1000 f.o.b. Works
Pennsylvania	$40.00
Chicago	49.00
Birmingham	50.00
Silica clay, per ton	$8.00 to 9.00

Magnesite Brick

	Per Net Ton
Standard size, f.o.b. Baltimore and Chester, Pa.	$65.00
Grain magnesite, f.o.b. Baltimore and Chester, Pa.	40.00

Chrome Brick

	Per Net Ton
Standard size	$45.00 to $48.00

Mill Prices of Bolts, Nuts, Rivets and Set Screws

Bolts and Nuts

(Less-than-Carload Lots)

(F.o.b. Pittsburgh, Cleveland, Birmingham and Chicago)

	Per Cent Off List
Machine bolts, small, rolled threads	60 and 10
Machine bolts, all sizes, cut threads	50, 10 and 10
Carriage bolts, smaller and shorter, rolled threads	50, 10 and 10
Carriage bolts, cut threads, all sizes	50 and 10
Eagle carriage bolts	65 and 10
Lag bolts	60, 10 and 10
Plow bolts, Nos. 3 and 7 heads	50 and 10
(Extra of 20% for other style heads)	
Machine bolts, c.p.c. and t. nuts, ⅜ x 4 in.,	45, 10 and 5
Larger and longer sizes	45, 10 and 5
Bolt ends with hot-pressed nuts	50, 10 and 10
Bolt ends with cold-pressed nuts	45, 10 and 5
Hot-pressed nuts, blank and tapped, square,	4.00c. per lb. off list
Hot-pressed nuts, blank or tapped, hexagons,	4.40c. per lb. off list
C.p.c. and t. square or hex. nuts, blank or tapped	4.10c. per lb. off list
Washers*	6.50c. to 6.25c. per lb. off list

*F.o.b. Chicago and Pittsburgh.

The discount on machine, carriage and lag bolts is 5 per cent more than above for car lots. On hot-pressed and cold-punched nuts the discount is 25c. more per 100 lb. than quoted above for car lots.

Bolts and Nuts

(Quoted with actual freight allowed up to but not exceeding 50c. per 100 lb.)

	Per Cent Off List
Semi-finished hexagon nuts:	
⅞ in. and smaller, U. S. S.	80, 10 and 5
⅞ in. and larger, U. S. S.	75, 10, and 5
Small sizes, S. A. E.	80, 10, 10 and 5
S. A. E., ⅝ in. and larger	75, 10, 10 and 5
Stove bolts in packages	80, 10 and 5
Stove bolts in bulk	80, 10, 5 and 2½
Tire bolts	60 and 5

Semi-Finished Castellated and Slotted Nuts

(Actual freight allowed up to but not exceeding 50c. per 100 lb.)

(To jobbers and consumers in large quantities)

	Per 100 Net S.A.E.	Per 100 Net U.S.S.		Per 100 Net S.A.E.	Per 100 Net U.S.S.
¼-in.	$0.44	$0.44	¾-in.	$2.35	$2.40
5/16-in.	0.515	0.515	⅞-in.	3.60	3.60
⅜-in.	0.62	0.66	1-in.	5.65	5.80
7/16-in.	0.79	0.90	1⅛-in.	8.90	8.90
½-in.	1.01	1.05	1¼-in.	12.60	13.10
9/16-in.	1.38	1.42	1⅜-in.	18.35	18.35
⅝-in.	1.70	1.73	1½-in.	21.00	21.00

Larger sizes.—Prices on application.

Large Rivets

	Base Per 100 Lb.
F.o.b. Pittsburgh	$2.50 to $2.60
F.o.b. Cleveland	2.70
F.o.b. Chicago	2.75

Small Rivets

	Per Cent Off List
F.o.b. Pittsburgh	70 and 10
F.o.b. Cleveland	70 and 10
F.o.b. Chicago	70 and 10

Cap and Set Screws

(Freight allowed up to but not exceeding 50c. per 100 lb.)

	Per Cent Off List
Milled cap screws	80 and 10
Milled standard set screws, case hardened,	80 and 5
Milled headless set screws, cut thread	80
Upset hex. head cap screws, U. S. S. thread,	80, 10 and 10
Upset hex. cap screws, S.A.E. thread,	80, 10 and 10
Upset set screws	80, 10 and 5
Milled studs	70 and 5

Chicago

Total Steel Bookings Decline in May But Demand for Bars Improves

CHICAGO, June 1.—New business in finished steel products is still tapering off slightly, and the total volume for May was several per cent below that of April. Specifications are not quite so heavy as during the previous week, but are approximately equal to shipments. Bar mill bookings have shown substantial betterment, those of May being fully 15 per cent heavier than in the previous month.

The local building situation is somewhat unsettled for the reason that organized labor is making a strenuous effort to prevent the employment of non-union men. In the meantime, however, building projects are moving ahead steadily, and mills last week booked close to 30,000 tons of plain material. No new rail tonnages have appeared in this market, but railroads are pressing for deliveries and specifications are in excess of shipments. The Gary rail mill is rolling at the rate of 18,000 tons per week. Orders for rolled steel wheels are particularly heavy, and the week just closed is one of the largest from the standpoint of orders that the local mill has ever had.

The No. 3 stack of the Inland Steel Co. was blown in this week after having been out for about 10 days for minor repairs.

Pig Iron.—Prices of Northern No. 2 foundry, malleable and high phosphorus iron are steady at $21.50, local furnace. Reports of concessions below these prices are traceable to offers of several small lots of resale foundry iron at $21 and a small tonnage of an off-grade malleable iron at $20.50. Shipments of foundry and malleable iron for May are slightly under those for April. Foundry melt is holding fairly steady, although the operations of malleable foundries are decidedly spotty. This can be attributed, however, to fluctuations in the output of some of the automobile makers. Melters continue to buy at close range and in some cases are pressing for shipment a week following the date of placing the order. The Allis-Chalmers Mfg. Co. is reported to have bought 2500 tons of malleable iron and 200 tons of 15 per cent silvery. The latter was taken at $41, f.o.b. Jackson, or $46.39, delivered in Milwaukee. Several inquiries for 200 to 300 tons of foundry iron for delivery through June are open in Milwaukee, and a St. Paul melter is asking for 200 tons for delivery during the current month. Several small sales of low phosphorus iron are reported at current quotations, and a Milwaukee user took 250 tons of charcoal iron at $26, furnace.

Quotations on Northern foundry, high phosphorus and malleable iron are f.o.b. local furnace, and do not include an average switching charge of 61c. per ton. Other prices are for iron delivered at consumers' yards.

Northern No. 2 foundry, sil. 1.75 to 2.25		$21.50
Northern No. 1 foundry, sil. 2.25 to 2.75		22.00
Malleable, not over 2.25 sil.		21.50
High phosphorus		21.50
Lake Superior charcoal, averaging sil. 1.50, delivered at Chicago		29.04
Southern No. 2 (all rail)	$27.01 to	28.01
Southern No. 2 (barge and rail)	26.18 to	27.18
Low phos., sil. 1 to 2 per cent, copper free	30.70 to	31.20
Silvery, sil. 8 per cent		32.29
Ferrosilicon, 14 to 16 per cent		45.79

Ferroalloys.—The market is quiet, and no sales are reported except a few carlots of 19 to 21 per cent spiegeleisen, which were taken at $33, base Hazzard, Pa., or $40.76, delivered.

We quote 80 per cent ferromanganese, $95.56, delivered Chicago; 50 per cent ferrosilicon, $85, delivered; spiegeleisen, 18 to 22 per cent, $39.76 to $40.76, delivered Chicago.

Plates.—New plate business for the week was in small volume, but specifications are on the same level as during the previous seven days. The railroads are still inactive so far as new equipment buying is concerned, and mills at the moment are largely relying upon specifications from tank makers and structural fabricators. Mill prices are firm at 2.10c., Chicago. The price policy of producers for the third quarter is not yet announced, but it is believed that plates will soon follow the course taken by soft steel bars, that is, advance to a range of 2.10c. to 2.20c., Chicago.

The mill quotation on plates is 2.10c. per lb., base, Chicago.

Sheets.—Although demand has improved, it is still far from satisfactory. Prices are unstable except in the case of blue annealed, which is steady at 2.60c., Chicago district mills. Competition from the East is forcing Chicago makers to a lower price level on black and galvanized sheets. The leading producer is still maintaining 4.70c., mill, on galvanized, and 3.45c., mill, on black sheets, but tonnage is entering Chicago at the equivalent of 4.60c. for galvanized and 3.30c., Chicago district mill, for black.

Chicago delivered prices from mill are 3.35c. to 3.50c. for No 28 black; 2.65c. for No. 10 blue annealed; 4.65c. to 4.75c. for No. 28 galvanized. Delivered prices at other Western points are equal to the freight from Gary plus the mill prices, which are 5c. per 100 lb. lower than the Chicago delivered prices.

Structural Material.—Building programs continue heavy, and local mills this week booked over 30,000 tons of plain material. In Chicago the Pittsfield Building will require close to 12,000 tons, and the Medical Arts Building, 7000 tons. Fabricators are busy, with bookings averaging two to three months. Structural awards during May were larger than a year ago, and in view of the tonnage out for figures, it is believed that there will be little or no abatement during June. Fabricators' bids early in May showed a tendency to decline, but as the month wore on, recovered. At the moment, prices entered on new work are steady, although still too low from the viewpoint of the shops. Plain material is firm at 2.10c., Chicago, and it is the general impression throughout the trade that the price range of 2.10c. to 2.20c., adopted a few days ago on soft steel bars, will shortly go into effect on structural shapes.

The mill quotation on plain material is 2.10c. per lb. base, Chicago.

Bars.—Soft steel bar bookings for the final week in May are 15 per cent above those for the last week in April. Demand is emanating from widely diversified sources and is gradually expanding except in the case of a few automobile parts manufacturers serving two or three motor car builders. Agricultural implement makers are becoming more active and are now estimating third quarter requirements. The demand for concrete bars is holding up well, and dealers are experiencing some difficulty in obtaining mill shipments as required. Mill bookings are now in the neighborhood of 45 to 60 days, but better accommodation is offered if requirements match up with rollings. Mill prices now range from 2.10c. to 2.20c., Chicago. Producers claim that 2.10c. is the minimum quotable on sizable tonnages and contracts, whereas 2.20c. is the price to consumers of average and small lots. The railroads have placed fair-sized specifications, permitting the mills to arrange more satisfactory schedules than for several weeks. New buying, although light, shows improvement over the previous week. The price of iron bars is firm at 2c., Chicago. Specifications for alloy steel bars are in greater volume. Prices of alloy steel bars are steady. Demand for rail steel bars is expanding, largely because of the tonnage required for concrete reinforcement. Shipments of fence posts continue heavy, and bed manufacturers are approaching their busy season. Specifications from farm machinery manufacturers are slightly improved. Rail steel bars are still quotable at 1.90c. to 2c., Chicago, although prices are showing a stronger tendency.

Mill prices per lb. are: Mild steel bars, 2.10c. to 2.20c., base, Chicago; common bar iron, 2c., base, Chicago; rail steel bars, 1.90c. to 2c., base, Chicago.

Rails and Track Supplies.—New rail tonnage placed with mills throughout the country totaled nearly 155,000 tons during the month of May. The Southern Pacific order, which included 23,748 tons of 75, 90 and 110-lb. standard-section rails and 4280 tons of 128-lb. girder rails, was divided between the Colorado Fuel &

Iron Co. and the Tennessee Coal, Iron & Railroad Co. New bookings in the Chicago district during the week were light, although they included 1000 tons of rail joints and 9000 kegs of spikes and bolts. Specifications for standard rail sections, however, are liberal, being heavier than shipments. Only a few miscellaneous lots of iron tie plates were placed during the week, but specifications are liberal.

Standard Bessemer and open-hearth rails, $43; light rails, rolled from billets, $36 to $38 per gross ton, f.o.b. maker's mill.

Standard railroad spikes, 2.90c. to 3c. per lb. mill; track bolts with square nuts, 3.90c. to 4c. mill; steel tie plates, 2.25c. to 2.35c. mill; angle bars, 2.75c., mill.

Bolts, Nuts and Rivets.—Prices of bolts, nuts and rivets are firm and are being used without change on third quarter contracts, which are now in the course of preparation. The industry, as a whole, is operating at 70 to 75 per cent of capacity, although makers who cater to the railroads are operating at a somewhat higher rate. Specifications for the week are slightly improved, although backlogs are being steadily reduced and further curtailment of operations is in sight unless there is an early change for the better in new business.

Wire Products.—New buying by the retail and jobbing trade has gained, this being particularly true of field fence, on which full terms were recently announced. Demand for nails is also in good volume. Improvement in buying is widespread, although most marked in the West and Southwest. Specifications from the manufacturing trade are growing heavier. Total bookings of the mills for May were about 10 per cent above those for April, and also well in advance of those for May, 1925. Mill prices are firm and are shown on page 1605.

Cold-Rolled Strips.—Manufacturers in general, including the automotive industry, are specifying more liberally. Bed makers are nearing their busy season and are more active factors in the market. Prices remain at 3.75c., base Cleveland, or 4.05c., delivered Chicago.

Billets.—Rolling billets, 4-in. and over, are firm at $35 per gross ton, Chicago, and users are specifying in fair tonnages.

Hot-Rolled Strips.—Prices on this commodity are steady, and demand is good. A large user in this district serving the automotive industry is operating at capacity.

Cast Iron Pipe.—The market is fairly active, although most transactions involve less than 100 tons each. A large number of the smaller municipalities are placing orders in carload lots. Contracts from private enterprises are in good volume, and fresh inquiry is well maintained. Oak Park, Ill., is asking for prices on 200 tons of 6, 8 and 12-in. Class B pipe. Prices are slightly stronger, but still range from $41 to $42, base Birmingham, for 6-in. and larger diameters.

We quote per net ton, delivered Chicago, as follows: Water pipe, 4-in., $53.20 to $54.20; 6-in. and over, $49.20 to $50.20; Class A and gas pipe, $4.

Reinforcing Bars—Inquiries and lettings are more numerous. Warehouse shipments are gradually expanding and are running ahead of those of a year ago. Competition is keen, and reports are current that attractive business has been taken slightly below the warehouse price of 2.60c., Chicago, on billet bars. The bulk of the tonnage placed, however, is at that figure. The recently announced advance in the mill price of soft steel bars has not yet been reflected in the price of deformed bars out of warehouse. The outstanding award of the week is 500 tons for an addition to the Crawford Avenue station of the Commonwealth Edison Co. Among new local projects requiring large tonnages is the Cook County jail calling for 2000 tons. New projects up for figures and contracts awarded are shown on page 1612.

Coke.—The demand for by-product foundry coke has eased off a trifle. Chicago district ovens are all lighted, and no coke has as yet been stocked. Quotations are steady at $9.75, ovens, and $10.25, delivered in the Chicago switching district.

Old Material.—Prices on the whole are nominal and show no tendency either to recede still further or to advance. Users are cautious in buying and continue to take only such quantities as will meet their immediate requirements. No important tonnage of heavy melting steel was placed by consumers during the week. Trading in steel among dealers is also light, at prices ranging from $12 and $12.25. There is a growing tendency for dealers to sell directly to consumers at 25c. to 50c. above the quotations the dealers receive from brokers. This has relieved to some extent the congestion which would otherwise have resulted from the appearance of large quantities of scrap on track. It is felt by some that the market is at or near the bottom, and brokers are not so eager to sell short as was the case 30 days ago. The railroads are issuing heavy lists and prices obtained by them are, as a rule, slightly above those quoted below.

We quote delivered in consumers' yards, Chicago and vicinity, all freight and transfer charges paid for all items except relaying rails, including angle bars to match, which are quoted f.o.b. dealers' yards:

	Per Gross Ton	
Heavy melting steel	$12.00 to	$12.50
Frogs, switches and guards, cut apart, and miscellaneous rails	13.25 to	13.75
Shoveling steel	12.00 to	12.50
Hydraulic compressed sheets	10.00 to	10.50
Drop forge flashings	9.00 to	9.50
Forged, cast and rolled steel car wheels	16.00 to	16.50
Railroad tires, charging box size	16.25 to	16.75
Railroad leaf springs, cut apart	16.00 to	16.50
Steel couplers and knuckles	15.00 to	15.50
Coil springs	16.50 to	17.00
Low phos. punchings	15.00 to	15.50
Axle turnings, foundry grade	13.00 to	13.50
Axle turnings, blast furn. grade	11.25 to	11.75
Relaying rails, 56 to 60 lb.	25.00 to	26.00
Relaying rails, 65 lb. and heavier	26.00 to	31.00
Rerolling rails	14.75 to	15.25
Steel rails, less than 3 ft.	16.00 to	16.50
Iron rails	13.50 to	14.00
Cast iron borings	9.50 to	10.00
Short shoveling turnings	9.50 to	10.00
Machine shop turnings	7.25 to	7.75
Railroad malleable	16.50 to	17.00
Agricultural malleable	15.50 to	16.00
Angle bars, steel	14.00 to	14.50
Cast iron car wheels	15.00 to	15.50
Per Net Ton		
No. 1 machinery cast	15.75 to	16.25
No. 1 railroad cast	14.75 to	15.25
No. 1 agricultural cast	14.50 to	15.00
Stove plate	12.50 to	13.00
Grate bars	12.00 to	12.50
Brake shoes	11.25 to	11.75
Iron angle and splice bars	13.00 to	13.50
Iron arch bars and transoms	18.50 to	19.00
Iron car axles	23.50 to	24.00
Steel car axles	17.00 to	17.50
No. 1 railroad wrought	10.50 to	11.00
No. 2 railroad wrought	10.75 to	11.25
No. 1 busheling	9.25 to	9.75
No. 2 busheling	5.50 to	6.00
Locomotive tires, smooth	15.50 to	16.00
Pipes and flues	8.50 to	9.00

Warehouse Prices, f.o.b. Chicago

	Base per Lb.
Plates and structural shapes	3.10c.
Mild steel bars	3.00c.
Reinforcing bars, billet steel	2.60c.
Cold-finished steel bars and shafting—	
Rounds and hexagons	3.60c.
Flats and squares	4.10c.
Hoops	4.15c.
Bands	3.65c.
No. 28 black sheets	4.10c.
No. 10 blue annealed sheets	3.50c.
No. 28 galvanized sheets	5.25c.
Standard railroad spikes	3.55c.
Track bolts	4.55c.
Structural rivets	3.50c.
Boiler rivets	3.70c.
	Per Cent Off List
Machine bolts	50 and 5
Carriage bolts	47½
Coach or lag screws	55 and 5
Hot-pressed nuts, square, tapped or blank,	3.25c. off per lb.
Hot-pressed nuts, hexagons, tapped or blank,	3.75c. off per lb.
No. 8 black annealed wire, per 100 lb.	$3.30
Common wire nails, base, per keg	3.05
Cement coated nails, base per keg	3.05

Cleveland

Bar Advance Brings Out Liberal Specifications—Sheets Weaker

CLEVELAND, June 1.—The advance in steel bars to 2c., Pittsburgh, brought out some good bar specifications against contracts that had been revised to 1.90c., although the lower price during the few days that it existed failed to stimulate buying. The stiffening of the price also has brought out some inquiry for third quarter contracts, a few of which have been closed on the 2c. basis. Independent mills have followed the Steel Corporation in marking up steel bars to 2c., and efforts will be made to maintain that price for the third quarter. While not much new tonnage was booked at 1.90c., many consumers will secure their June shipments at that price through a revision of second quarter contracts. Although the advance in the price of bars has had a sentimental effect on the market, it has not shown any tangible results in stiffening prices on some other mill products. Plates appear to be firm at 1.90c., Pittsburgh, in this market in spite of a weakness in other districts, and structural material is unchanged at 1.90c.

The Chevrolet Motor Co., Detroit, which recently inquired for steel for the third quarter, is understood to have purchased considerable tonnage in sheets and cold-rolled strip steel for that delivery. Another Detroit motor company has made some third quarter commitments, but other motor car builders have not yet come into the market for that delivery. Reports from Detroit indicate that production by leading car builders this month will show little change from May.

Lake shipyards have received an inquiry for a freight boat to be used in the limestone trade. Two ore boats are still pending. The Detroit & Toledo Shore Line Railroad has placed an additional order for 1000 tons of rails with the Bethlehem Steel Co. Buying by railroads for repair work has fallen off. Structural inquiry is light.

Pig Iron.—The volume of business was fair the past week and some of the producers booked more tonnage than during the previous week. While no large orders were taken, there were a number of sales of foundry and malleable iron in lots of 500 tons and larger. A western Ohio consumer placed an order for slightly less than 1000 tons of basic iron, this going to a Lake furnace. The Valley district was not a competitor for this business, because of its freight disadvantage, and the iron brought 50c. a ton or more above the Valley base price of $18. While prices on foundry and malleable grades have not strengthened, some producers are refusing to make deeper concessions than have appeared recently for iron for shipment to points where they have a freight disadvantage. Prices in the Valley district are well maintained at $18.50, furnace, although there are unconfirmed reports that this price has been shaded 25c. a ton. The Cleveland price is unchanged at $19.50 at furnace for local delivery, at which a few small lot sales were made. The commonly quoted Cleveland price for out-of-town shipment is $18.50 furnace, although there are reports that some business has been taken at $18 when the seller had a considerable freight disadvantage. One central Ohio furnace is on a $19 base, at which it is taking most of the business in its immediate territory. The market in western Ohio and Indiana is quotable at $19.50 furnace. Quotations in Michigan are unchanged at $20.50 to $21, Lake furnace.

Quotations below, except on basic and low phosphorus iron, are delivered Cleveland, and for local iron include a 50c. switching charge. Ohio silvery and Southern iron prices are based on a $3.02 freight rate from Jackson and $6.01 from Birmingham:

Basic, Valley furnace	$18.00
N'th'n No. 2 fdy., sil. 1.75 to 2.25	20.00
Southern fdy., sil. 1.75 to 2.25	26.51 to 28.01
Malleable	20.00
Ohio silvery, 8 per cent	30.52
Standard low phos., Valley furnace	27.50

Coke.—The market is very quiet with business confined almost wholly to specifications against contracts. Connellsville foundry coke is unchanged at $4 to $5.50, ovens. Ohio by-product foundry coke is quoted at $7.50, ovens, for June shipment.

Alloy Steel.—The slowing down in production by the automotive industry has been reflected in the demand for alloy steels, and the backlog of orders has been cut down. Sales are light, and prices on round lots are untested. Nickel Chrome, Series No. 3100, and 3½ per cent nickel steel are easier, with quotations $2 a ton lower than have recently been maintained.

Bolts, Nuts and Rivets.—The demand for bolts and nuts continues slow and manufacturers need orders, but there are no reports of price concessions. There is no change in the large rivet situation. Small rivets are in good demand, but the discount of 70 and 10 per cent is still being shaded about 5 per cent for large orders.

Semi-Finished Steel.—Some small-lot sales are being made at regular prices. Consumers having contracts are specifying against these in small quantities, as needed.

Sheets.—Prices have further declined $1 to $2 a ton except on black sheets, which evidently had previously reached a point below which mills refused to go. Automobile body sheets, after remaining firm several weeks, have slipped $2 a ton to 4.20c., Pittsburgh, on sales of round lots to two Detroit automobile companies. However, some mills are still comfortably filled with orders and are declining to meet this price. Blue annealed sheets have settled down to a price of 2.30c., and are being offered in Detroit at 2.25c. On galvanized sheets 4.30c. has become a rather common price, and a 4.25c. quotation is appearing. Sales continue light.

Cold-Rolled Strip Steel.—While some small-lot sales are being made at 3.75c., mills that have quoted that price on fair-sized inquiries from the Detroit automotive industry have been advised that lower quotations have appeared.

Reinforcing Bars.—The Cleveland sewage disposal plant, requiring 1600 tons, which has been pending for some time, will be placed in a few days. Inquiry for small lots is fair. Although 2c., Pittsburgh, is supposedly the market on new billet steel bars, a 1.90c. price is not uncommon. Rail steel bars are unchanged at 1.90c. at mill.

Warehouse Business.—Sheets out of stock have been reduced $5 a ton for black and galvanized, and $2 a ton for blue annealed. Prices had been irregular for some time as a reflection of the situation in mill prices. Other warehouse prices are firm. Sheet business has improved, but warehouse orders for other steel products have declined.

Old Material.—Machine shop turnings are very weak and have declined 25c. a ton. Other grades are unchanged, but the market shows no strength. Mills are not buying, and there is very little demand from dealers. The Bourne-Fuller Co., Cleveland, which has been a consumer of machine shop turnings which it bundled for use in its open-hearth furnaces, has discontinued the use of this material. This was evidently a factor in depressing the price of this grade. Some automobile scrap sold in the past week in Detroit brought $7.15 for machine shop turnings and $8.50 for borings. Dodge Brothers, Inc., closed May 27 on a list

Warehouse Prices, f.o.b. Cleveland

	Base per Lb.
Plates and structural shapes	3.00c.
Mild steel bars	3.00c.
Cold-finished rounds and hexagons	3.90c.
Cold-finished flats and squares	4.40c.
Hoops and bands	3.65c.
No. 28 black sheets	3.85c.
No. 10 blue annealed sheets	3.15c.
No. 28 galvanized sheets	5.00c.
No. 9 annealed wire, per 100 lb	$3.00
No. 9 galvanized wire, per 100 lb	3.45
Common wire nails, base, per keg	3.00

of 7700 tons, mostly in borings, turnings, flashings and compressed steel.

We quote delivered consumers' yards in Cleveland per gross ton:

Heavy melting steel	$13.50 to $14.00
Rails for rolling	16.25 to 16.50
Rails under 3 ft.	17.50 to 18.00
Low phosphorus billet, bloom and slab crops	18.50 to 19.00
Low phosphorus sheet bar crops.	18.50 to 19.25
Low phosphorus plate scrap	18.50
Light plate scrap	17.50
Low phosphorus forging crops	17.25 to 17.50
Cast iron borings	11.00 to 11.50
Machine shop turnings	9.75 to 10.25
Mixed borings and short turnings	11.00 to 11.50
Compressed sheet steel	13.00 to 13.25
No. 1 railroad wrought	11.50 to 12.00
No. 2 railroad wrought	13.50 to 14.00
Railroad malleable	19.00 to 19.50
Light bundled sheet stampings	11.75 to 12.25
Steel axle turnings	12.50 to 13.00
No. 1 cast	16.50 to 17.00
No. 1 busheling	11.00 to 11.50
No. 2 busheling	10.50 to 11.00
Railroad grate bars	12.50 to 13.00
Pipes and flues	10.00 to 10.50

Philadelphia

Steel Buying Moderately Better—Sale of 4000 Tons of Low Phosphorus Iron

PHILADELPHIA, June 1.—With the Sesquicentennial Exposition and the national conclave of Shriners opening simultaneously, business was virtually at a standstill in Philadelphia today. And following a triple holiday the mail received at local selling offices was very light. However, the steel trade, in totaling the orders of the last two weeks, notes with satisfaction that the volume was greater than in the first half of May. There was a substantial gain in orders for steel pipe and bars. Some of the incoming pipe business was delayed because of the late spring, while the demand for bars has been stimulated largely by the desire of users to get under cover at 1.90c., Pittsburgh. This price is still open at two or three mills for some of the large consumers and jobbers, but 2c. is being generally quoted on small orders.

The pig iron market is quiet, the largest sale being 4000 tons of low phosphorus iron. Scrap continues weak.

Ferroalloys.—The demand for ferromanganese is exceedingly light. Prices are unchanged, one maker quoting $90 and the other $95, f.o.b. furnace.

Billets.—There is no real test of the semi-finished steel market. Quotations for billets remain at $35, Pittsburgh, for rerolling quality and $40 for forging quality.

Pig Iron.—Demand for low phosphorus pig iron from domestic furnaces has shown a gain because of the stoppage of shipments from England, due to the industrial chaos resulting from the coal strike. One sale of 4000 tons is reported, the price being $23.50, f.o.b. furnace. There is a fair demand for foundry iron in lots ranging from a carload up to 500 tons, and the pressure that is being brought to bear on the furnaces to hurry shipments indicates that there is no falling off in the melt. Most of the furnaces of this district have orders on their books equal to the production of two to three months, and there seems no question that the ordinary flow of business will easily take care of the district's present output through the third quarter. Prices asked for foundry iron show no change, being $21.50, furnace, for No. 2 plain and $22 for No. 2X. The Standard Sanitary Mfg. Co. is in the market for 1500 tons of foundry iron for its Baltimore plant. There seems to be doubt in the minds of importers as to whether the Treasury Department's ruling as to a countervailing duty on German pig iron will stand, and while the matter is in abeyance German furnaces are quoting on a c.i.f. basis. Under such sales importers would have to pay the duty, if one is assessed, and it is not likely that any business will be done until there is official assurance that no duty will be levied.

The following quotations are, with the exception of those on low phosphorus iron, for delivery at Philadelphia and include freight rates varying from 76c. to $1.63 per gross ton:

East. Pa. No. 2 plain, 1.75 to 2.25 sil.	$22.26 to $22.76
East. Pa. No. 2X, 2.25 to 2.75 sil.	22.76 to 23.26
East. Pa. No. 1X	23.26 to 23.76
Virginia No. 2 plain, 1.75 to 2.25 sil.	27.67 to 28.67
Virginia No. 2X, 2.25 to 2.75 sil.	28.17 to 29.17
Basic delivered eastern Pa.	21.75 to 22.25
Gray forge	22.00 to 22.50
Malleable	22.50 to 23.00
Standard low phos. (f.o.b. furnace)	22.00 to 23.00
Copper bearing low phos. (f.o.b. furnace)	23.50 to 24.00

Plates.—Although there has been a falling off in the volume of plate business, it has not reached serious proportions. Orders are being received at the mills in dribs. There is little question as to price, which is being well maintained at 1.90c., Pittsburgh. The American Brown Boveri Electric Corporation has received an order for 33 Coast Guard boats, requiring a total of about 3500 tons of plates, which will be furnished by the Carnegie Steel Co. The "Red D" Line is asking for bids on two large steamers.

Structural Material.—There has been no change in the situation as regards structural shapes. Prices continue at a range of 1.80c. to 1.90c., Pittsburgh, depending on the mill. Fabricated steel contracts are mostly small.

Bars.—The announcement by the leading interest of an advance on steel bars to 2c., Pittsburgh, has been followed by one or two other mills, and among the remaining mills there is a greater disposition to ask 2c. on small orders. However, 1.90c. is still available in some quarters to large buyers. Bar iron is unchanged at 2.22c., Philadelphia.

Sheets.—Black sheets are weaker, but galvanized and blue annealed sheets have shown no change within the week. The usual range on black sheets is 3.05c. to 3.15c., Pittsburgh, but some sales have been made at 3c. On galvanized sheets the usual quotations are 4.30c. to 4.40c. and on blue annealed 2.35c. to 2.40c., with an occasional quotation of 2.30c.

Imports.—Last week's imports of pig iron, ore and steel were as follows: Pig iron from France, 2200 tons; pig iron from India, 1882 tons; iron ore from Spain, 5540 tons; manganese ore from British West Africa, 4992 tons; structural steel from Germany, 107 tons; structural steel from Belgium, 324 tons; hoop steel from England, 31 tons; cast iron pipe from France, 487 tons.

Old Material.—While the scrap market continues weak, there has been evidence that it is difficult to buy tonnages at the minimum prices quoted. A steel com-

Warehouse Prices, f.o.b. Philadelphia

	Base per Lb.
Tank steel plates, ¾-in. and heavier	2.80c. to 3.00c.
Tank steel plates, ¼-in.	3.00c.
Structural shapes	2.75c. to 2.90c.
Soft steel bars, small shapes and iron bars (except bands)	3.00c.
Round-edge iron	3.50c.
Round-edge steel, iron finished, 1½ x 1½ in.	3.50c.
Round-edge steel, planished	4.30c.
Reinforcing steel bars, square, twisted and deformed	3.00c.
Cold-finished steel, rounds and hexagons	4.00c.
Cold-finished steel, squares and flats	4.50c.
Steel hoops	4.00c. to 4.25c.
Steel bands, No. 12 gage to ¼-in., inclusive	3.75c. to 3.90c.
Spring steel	5.00c.
No. 28 black sheets	4.55c.
No. 10 blue annealed sheets	3.50c.
No. 28 galvanized sheets	5.75c.
Diamond pattern floor plates—	
¼-in.	5.30c.
⅛-in.	5.50c.
Rails	3.20c.
Tool steel	8.50c.
Swedish iron bars	6.00c. to 6.50c.

pany paid $15.50, delivered, for a few thousand tons of heavy melting steel, and another steel company was unable to obtain a sufficient tonnage of bundled sheets and machine shop turnings at its offering price of $13, and was obliged to pay $13.50. A few grades are slightly lower in price. The volume of buying is small.

We quote for delivery, consuming points in this district, as follows:

No. 1 heavy melting steel	$15.00 to $15.50
Scrap rails	15.00 to 15.50
Steel rails for rolling	16.00 to 16.50
No. 1 low phos., heavy, 0.04 per cent and under	20.00 to 20.50
Couplers and knuckles	18.00 to 18.50
Rolled steel wheels	18.00 to 18.50
Cast iron car wheels	17.00 to 17.50
No. 1 railroad wrought	17.00 to 17.50
No. 1 yard wrought	16.50 to 17.00
No. 1 forge fire	13.50
Bundled sheets (for steel works)	13.00 to 13.50
Mixed borings and turnings (for blast furnace)	12.50 to 13.00
Machine shop turnings (for steel works)	13.00
Heavy axle turnings (or equivalent)	14.00 to 14.50
Cast borings (for steel works and rolling mill)	13.50
Cast borings (for chemical plant)	15.50 to 16.00
No. 1 cast	17.00 to 18.00
Heavy breakable cast (for steel works)	16.00 to 16.50
Railroad grate bars	13.50
Stove plate (for steel works)	13.50
Wrought iron and soft steel pipes and tubes (new specifications)	15.00
Shafting	21.00 to 22.00
Steel axles	22.50 to 23.00

New York

Immediate Steel Trend Uncertain—Moderate Volume of Pig Iron Buying

NEW YORK, June 1.—While there is nothing resembling a general rush to buy pig iron, sales during the past week totaled close to 10,000 tons, part of which was for delivery outside of this territory. The Ludlow Valve Mfg. Co., Troy, N. Y., equally divided 1200 tons of foundry iron between the Troy furnace and a Buffalo producer. The Standard Gas Equipment Corporation, New York, has closed for 500 tons of foundry iron for its Baltimore plant. Louis Sacks, Inc., Newark, bought 125 tons of malleable iron from an eastern Pennsylvania stack. The Hoosick Foundry Co., Hoosick Falls, N. Y., which was in the market for 1200 tons of foundry iron, has closed for 200 tons. In New England E. & T. Fairbanks & Co., St. Johnsbury, Vt., recently placed 600 tons each of foreign and domestic iron. The American Locomotive Co. has closed for 125 tons for its Richmond, Va., works. The General Electric Co. inquiry remains the most important pending tonnage in the market. For its Eastern plants it wants a total of 1700 tons, of which 400 tons is for Bayway, N. J., 500 tons for Everett, Mass., and 800 tons for Lynn. The pig iron trade along the Atlantic seaboard is commencing to pay more attention to the British coal strike. The collapse of the general strike caused many observers to overlook the fact that the British coal miners failed to return to work. The suspension of coal mining has caused most British blast furnaces to bank or go out of blast, besides crippling other industries. As yet the removal from the market of British iron, both in low phosphorus and other grades, does not seem to have affected prices of other foreign irons. Whether it will result in more business for domestic furnaces is still largely an open question.

We quote per gross ton delivered in the New York district as follows, having added to furnace prices $2.52 freight from eastern Pennsylvania, $4.91 from Buffalo and $5.54 from Virginia:

East Pa. No. 2 fdy., sil. 1.75 to 2.25	$24.02
East Pa. No. 2X fdy., sil. 2.25 to 2.75	24.52
East Pa. No. 1X fdy., sil. 2.75 to 3.25	25.02
Buffalo fdy., sil. 1.75 to 2.25 (all-rail)	24.91
Buffalo fdy., sil. 1.75 to 2.25 (by barge canal, del'd alongside in lighterage limits, N. Y. and Brooklyn)	22.75
No. 2 Virginia fdy., sil. 1.75 to 2.25	27.54 to 29.54

Ferroalloys.—Of inquiries for ferromanganese there are none, and prices are practically unchanged at $88, seaboard, as a minimum for the foreign alloy, with domestic makers at $95, furnace. A canvass of the market here, regarding the report from Washington that over 4600 tons of Russian ferromanganese was imported into the United States in April, reveals complete ignorance of any such transactions and the belief that the statistics must be wrong. New business in spiegeleisen is confined to small and carload lots. Specifications on contract for 50 per cent ferrosilicon continue good and the small amount of new business taken is booked at $87.50, delivered, or $2.50 higher than the contract price.

Warehouse Business.—Most jobbers found May one of the best months of the year and in some quarters it is predicted that when the business of the month is totaled it will prove to have been not only the largest month this year but will compare favorably with the outstanding months of last year. Prices on all products are firm and the sheet market is apparently quite steady on the new basis of 4.35c. to 4.50c. per lb., base

Warehouse Prices, f.o.b. New York

	Base per Lb.
Plates and structural shapes	3.34c.
Soft steel bars and small shapes	3.24c.
Iron bars	3.24c.
Iron bars, Swedish charcoal	7.00c. to 7.25c.
Cold-finished steel shafting and screw stock—	
Rounds and hexagons	4.00c.
Flats and squares	4.50c.
Cold-rolled strip, soft and quarter hard	6.25c.
Hoops	4.49c.
Bands	3.99c.
Blue annealed sheets (No. 10 gage)	3.89c.
Long terne sheets (No. 28 gage)	6.35c.
Standard tool steel	12.00c.
Wire, black annealed	4.50c.
Wire, galvanized annealed	5.15c.
Tire steel, 1½ x ½ in. and larger	3.30c.
Smooth finish, 1 to 2½ x ¼ in. and larger	3.65c.
Open-hearth spring steel, bases	4.50c. to 7.00c.

	Per Cent Off List
Machine bolts, cut thread	40 and 10
Carriage bolts, cut thread	30 and 10
Coach screws	40 and 10

Boiler Tubes—	Per 100 Ft.
Lap welded steel, 2-in.	$17.33
Seamless steel, 2-in.	20.24
Charcoal iron, 2-in.	25.00
Charcoal iron, 4-in.	67.00

Discounts on Welded Pipe

Standard Steel—	Black	Galv.
⅛-in. butt	46	29
¾-in. butt	51	37
⅛-in. butt	53	39
2½-6-in. lap	48	35
7 and 8-in. lap	44	17
11 and 12-in. lap	37	12
Wrought Iron—		
⅛-in. butt	4	+19
¾-in. butt	11	+ 9
1-1½-in. butt	14	+ 6
2-in. lap	5	+14
3-6-in. lap	11	+ 6
7-12-in. lap	3	+16

Tin Plate (14 x 20 in.)

	Prime	Seconds
Coke, 100-lb. base box	$6.45	$6.20
Charcoal, per box—	A	AAA
IC	$9.70	$12.10
IX	12.00	14.25
IXX	13.90	16.00

Terne Plate (14 x 20 in.)

IC—20-lb. coating	$10.00 to $11.00
IC—30-lb. coating	12.00 to 13.00
IC—40-lb. coating	13.75 to 14.25

Sheets, Box Annealed—Black, C. R. One Pass

	Per Lb.
Nos. 18 to 20	4.15c. to 4.30c.
Nos. 22 and 24	4.20c. to 4.35c.
No. 26	4.25c. to 4.40c.
No. 28*	4.35c. to 4.50c.
No. 30	4.55c. to 4.70c.

Sheets, Galvanized

	Per Lb.
No. 14	4.45c. to 4.60c.
No. 16	4.60c. to 4.75c.
Nos. 18 and 20	4.75c. to 4.90c.
Nos. 22 and 24	4.90c. to 5.05c.
No. 26	5.05c. to 5.20c.
No. 28*	5.35c. to 5.50c.
No. 30	5.85c. to 6.00c.

*No. 28 and lighter, 36 in. wide ,20c. higher per 100 lb.

for black and 5.35c. to 5.50c. per lb., base for galvanized sheets, the lower prices being for 50 bundles or more.

Cast Iron Pipe.—No new inquiries have appeared and the market continues quiet except for a few purchases of small lots by private users. The 4000 tons of gas pipe for the Havana Electric Co. is still pending. W. E. Sexton & Co., Mineola, N. Y., contractors for installation of about 1500 tons of pipe at Union Beach, N. J., are understood to have closed on De Lavaud centrifugal pipe. Inquiries are still in preparation by Peekskill, N. Y., and Hagerstown, Md.

We quote pressure pipe per net ton, f.o.b. New York in carload lots, as follows: 6-in. and larger, $50.60 to $52.60; 4-in. and 5-in., $55.60 to $57.60; 3-in., $65.60 to $67.60; with $5 additional for Class A and gas pipe.

Finished Steel.—Bookings in May were in general equal to those of April. The June and July outlook for the mills is that volume will not fall off to any extent, but that the steady consumption will be so spread along and tardy in making its appearance as to render difficult the holding of prices. Sellers unanimously welcome the stiffening of steel bars to a 2c., Pittsburgh, basis for large lots and 2.10c. for less than 100 tons (or perhaps for only less than carloads). The apparent effort of the mills to maintain a high rate of operations is attributed not so much to keeping down the effect of overhead and otherwise lowering manufacturing cost as to keeping mill crews substantially intact against the competition of construction work for steel mill labor. The $2 a ton advance in steel bars resulted, it is said, from the relative ease of booking at a 1.90c. basis. In sheets a corresponding stiffness is absent. Black sheets have sold at 3c., Pittsburgh, although most of the business is now done at 3.15c. Galvanized sheets are easy to obtain at 4.30c. In wire there is an underlying weakness due to a disappointing volume of buying, but no change in prices has been uncovered. The railroad equipment field is without feature but demands of buildings and other construction are noteworthy and the basis of good hopes for the third quarter. The holidays served to make it difficult to ascertain what trend the market is now taking.

We quote for mill shipments, New York delivery, as follows: Soft steel bars, 2.34c. per lb.; plates, 2.19c. to 2.24c.; structural shapes, 2.14c. to 2.24c.; bar iron, 2.24c.

Old Material.—All grades of scrap continue quiet with brokers apparently securing sufficient material at present prices to satisfy the small demands of consumers. Prices are in most cases unchanged but still show a tendency to weakness.

Buying prices per gross ton, New York, follow:

Heavy melting steel (yard)	$9.75 to $10.25
Heavy melting steel (railroad or equivalent)	11.25 to 11.75
Rails for rolling	11.50 to 12.00
Relaying rails, nominal	23.00 to 24.00
Steel car axles	18.50 to 19.00
Iron car axles	21.50 to 22.00
No. 1 railroad wrought	13.50 to 14.00
Forge fire	9.50 to 10.00
No. 1 yard wrought, long	11.50 to 12.00
Cast borings (steel mill)	9.25 to 9.75
Cast borings (chemical)	12.50 to 13.00
Machine shop turnings	9.00 to 9.75
Mixed borings and turnings	9.25 to 9.75
Iron and steel pipe (1 in. diam., not under 2 ft. long)	11.25 to 11.50
Stove plate (steel mill)	9.25 to 9.75
Stove plate (foundry)	10.25 to 10.75
Locomotive grate bars	10.25 to 10.75
Malleable cast (railroad)	16.00 to 16.50
Cast iron car wheels	12.25 to 12.75
No. 1 heavy breakable cast	12.00 to 13.00

Prices which dealers in New York and Brooklyn are quoting to local foundries per gross ton follow:

No. 1 machinery cast	$16.50 to $17.00
No. 1 heavy cast (column, building material, etc.), cupola size	15.00 to 15.50
No. 2 cast (radiators, cast boilers, etc)	14.00 to 14.50

Coke.—Furnace grade continues quite firm at $3.25 per ton, Connellsville, for contracts and $3.10 per ton for spot shipment. An inquiry current in this district calls for about 3500 tons of furnace. Foundry continues quiet with little buying. The New York Air Brake Co., New York, is in the market for several carloads of by-product foundry. Quotations on standard foundry range from $7.91 to $9.41 per net ton, delivered Newark and Jersey City, N. J., $8.03 to $9.53, delivered northern New Jersey and $8.79 to $10.29, delivered New York or Brooklyn, N. Y. By-product continues at $9.75 to $10.77, delivered Newark or Jersey City, N. J.

REINFORCING STEEL

Awards for Week Total Nearly 8000 Tons and Projects Pending Are 5200 Tons

Nearly 8000 tons of reinforcing bars are required for the concrete construction work placed during the week. The largest jobs were 1600 tons for a motor mart in Boston and 1250 tons for harbor work at Maracaibo, Venezuela. Among the jobs pending, requiring about 5200 tons of bars, are two of outstanding size, 2000 tons for a Cook County jail, Chicago, and 1100 tons for a railroad freight house in Chicago. Awards follow:

NEW YORK, 300 tons, Packard Motor Car Co. building, Sherman Avenue in the Bronx, placed by Turner Construction Co., New York, with Jones & Laughlin Steel Corporation.

BROOKLYN, 130 tons, plant building, Hilo Varnish Co., to Igoe Brothers.

LONG ISLAND CITY, 250 tons, plant building, Morganite Brush Co., Inc., to Truscon Steel Co.

LONG ISLAND CITY, 100 tons, American Railway Express terminal, placed by Turner Construction Co., New York, with Jones & Laughlin Steel Corporation.

CRANFORD, N. J., 120 tons, road work, to Igoe Brothers.

STATE OF NEW JERSEY, 180 tons, road work, placed by M. Shapiro Co., Albany, N. Y., with Kalman Steel Co.

BALTIMORE, 450 tons, warehouse, Consolidated Gas, Electric Light & Power Co., to Jones & Laughlin Steel Corporation through Dietrich Brothers.

SALISBURY, N. C., 180 tons, highway bridge, to Jones & Laughlin Steel Corporation through Carolina Steel & Iron Co.

MEADVILLE, PA., 250 tons, factory for the Hookless Fastener Co., to Truscon Steel Co.

STATE OF PENNSYLVANIA, 200 tons, road work, placed by Leonard Paving Co., Inc., New York, with Truscon Steel Co.; 100 tons, road work, to Concrete Steel Co.

BOSTON, 1600 tons, Motor Mart garage addition, to Concrete Steel Co.

BOSTON, 300 tons, office building, Boston Gas Co., to Joseph T. Ryerson & Son.

BLOOMINGTON, ILL., 600 tons of rail steel, sewage plant, to Laclede Steel Co.

CHICAGO, 350 tons, section Q, Sanitary district sewage plant, to Olney J. Dean & Co.

CHICAGO, 150 tons, Bradwell Public School, to Kalman Steel Co.

CHICAGO, 500 tons, Crawford Avenue station for the Commonwealth Edison Co., to Truscon Steel Co. and Kalman Steel Co.

CHICAGO, 140 tons of rail steel, Emmerman Building, to Inland Steel Co.

CHICAGO, 120 tons, Pinecrest Apartment, 3941 Pine Grove Avenue to Barton Spiderweb System.

CHICAGO, 150 tons, Rogers Park Hospital, to Jones & Laughlin Steel Co.

SANTA ANA, CAL., 232 tons, bridge over Santa Ana River near Santa Ana, to unnamed Southern California jobber.

SACRAMENTO, CAL., 127 tons, two bridges for State Highway Commission for erection in Monterey County, to unnamed firm.

MARACAIBO, VENEZUELA, 1250 tons, harbor work, to Concrete Steel Co.

Reinforcing Bars Pending

Inquiries for reinforcing steel bars include the following:

POUGHKEEPSIE, N. Y., 1000 tons, Mid-Hudson River Bridge; general contract awarded to Blakeslee & Rollins, Boston and New Haven.

CHICAGO, 150 tons, Ebinger Public School, Hanson Brothers, general contractors.

CHICAGO, 2000 tons, Cook County jail.

CHICAGO, 1100 tons, freight house for the D. M. & T. Railroad.

CHICAGO, 300 tons, factory building for the Appleton Electric Co.; W. W. Ahlschleger, architect.

CHICAGO, 220 tons, Clarendon Park Apartment; E. J. Meles, architect.

CHICAGO, 165 tons, Pressing Elementary School for the Chicago School Board.

CHICAGO, 228 tons, Leland Hotel; Dubin & Eisenberg, architects.

CHICAGO, 187 tons, Minuet ball room; Fridstein & Co., architects.

CHICAGO, 600 tons, apartment building at Sheridan Road and Grace Street.

CLEVELAND, 300 tons, building for Motors Realty Co.

San Francisco

Ferry Boat Inquiry Calls for 4000 Tons of Plates—Buying Is Sluggish

SAN FRANCISCO, May 29 (*By Air Mail*).—Conservative buying continues in nearly all departments of the market, and the strength of prices remains untested. While few fresh inquiries of importance have developed during the week, a number of good-sized fabricating jobs are pending, several of which are expected to be placed in the near future. The largest inquiry of the week, 4000 tons of plates and shapes, was put out by the Southern Pacific Co., which plans to build five new ferry boats. The local carpenters' strike, which started April 1, has not yet been settled, and as a result several newly designed structural projects are being held in abeyance.

Pig Iron.—Buying is confined to small lots and contract orders. A local importer during the week made a number of small sales of Indian foundry at about $25, duty paid, f.o.b. cars San Francisco. Quotations are as follows:

	Per Gross Ton
*Utah basic	$26.00 to $27.00
*Utah foundry, sil. 2.75 to 3.25	26.00 to 27.00
**English foundry, sil. 2.75 to 3.25	25.00
**Indian foundry, sil. 2.75 to 3.25	25.00
**German foundry, sil. 2.75 to 3.25	23.00 to 23.50
**Dutch foundry, sil. 2.75 to 3.25	22.50
**Belgian foundry, sil. 2.75 to 3.25	22.00

*Delivered San Francisco.
**Duty paid, f.o.b. cars San Francisco.

Shapes.—Fabricated steel lettings for the week total 449 tons; fresh inquiries call for 1400 tons. The largest individual inquiry calls for 1000 tons for an apartment at Green and Jones Streets, San Francisco. A hotel in Oakland, now being designed, will call for over 500 tons. While Eastern mills continue to quote plain material at 2.30c. to 2.35c., c.i.f. Coast ports, quotations continue to be made at less than 2.30c. on desirable tonnages.

Plates.—The Southern Pacific Co. has come into the market for 4000 tons of plates and shapes for five ferry boats. The Pacific Commercial Co. has been awarded 3200 tons for a pipe line at Ilo Ilo, P. I. It is understood that German steel will be furnished. The Nevada County Irrigation District, Grass Valley, Cal., has placed 125 tons for a pipe line with the Montague Pipe & Steel Co., San Francisco, and the Llewellyn Iron Works has taken 225 tons for a municipal pipe line in Los Angeles. Plates have been quoted during the past week at 2.20c., c.i.f. Coast ports, although most of the Eastern mills continue to ask 2.25c., generally, and 2.30c. on small tonnages.

Bars.—The local carpenters' strike continues to hamper construction work. The effects of the strike are especially noticeable in the relatively unimportant lettings of steel bars for concrete construction. Contracts for reinforcing bars known to have been closed during the week call for less than 400 tons. However, there are a number of fair-sized jobs pending. Concrete bar jobbers continue to quote as follows: 2.80c. base per lb. on lots of 250 tons; 2.95c. base per lb. on carload lots, and 3.20c. base on less-than-carload lots. The announcement that the Treasury Department will impose countervailing duties on importations of German steel, equal to the bonuses given by the raw steel syndicate, has aroused considerable interest locally. The advance of $2 a ton on steel bars during the week in the Pittsburgh and Chicago districts is not expected to affect local mill quotations for the present.

Warehouse Prices, f.o.b. San Francisco

	Base per Lb.
Plates and structural shapes	3.30c.
Mild steel bars and small angles	3.30c.
Small channels and tees, ¾-in. to 2¾-in.	3.90c.
Spring steel, ¼-in. and thicker	6.30c.
No. 28 black sheets	4.75c.
No. 10 blue annealed sheets	3.75c.
No. 28 galvanized sheets	6.00c.
Common wire nails, base per keg	$3.50
Cement coated nails, base per keg	3.00

Cast Iron Pipe.—While a fairly substantial tonnage is up for figures, awards during the week have been relatively light. The city of Los Angeles has placed 1088 tons of 12-in. and 16-in. Classes B and C pipe, under Specification 792-A, with the Grinnell Co. of the Pacific. Belgian pipe will be furnished. The city of Santa Ana, Cal., has placed 192 tons of 8-in. Class B pipe with the United States Cast Iron Pipe & Foundry Co. instead of with B. Nicoll & Co., as previously reported. The city of Santa Cruz, Cal., has awarded 105 tons of "mono-cast" pipe to the American Cast Iron Pipe Co. The city of Palo Alto, Cal., is taking bids on 385 tons of 4-in. to 16-in. Class B pipe.

Rails and Track Supplies.—The city of Seattle, Wash., has placed 550 tons of girder, high T-, and standard-section rails, for municipal car tracks, with the United States Steel Products Co. The Southern Pacific Co. has not yet placed its recent inquiry for T- and girder rails. A referendum will be held June 14 by the city of Eureka, Cal., on a bond issue of $100,000 for municipal improvements which will require 425 tons of rails, 200 kegs of nails, 2000 rail bonds, and 65 kegs of bolts.

Warehouse Business.—Sales during May have been slightly ahead of those of April, with some exceptions. Individual orders continue small, but the aggregate is fairly substantial. Quotations are unchanged.

Coke.—Inquiry for coke continues fairly active. While local importers have not changed their quotations, it is expected that future business will be taken at slightly higher prices because it is virtually impossible to get shipments of English coke, which has increased the demand for German by-product fuel. While quotations on English coke are nominal, importers quote as follows:

English beehive, $15 to $16 per ton at incoming dock, and English by-product, $12 to $14; German by-product, $11.50 to $12.

Birmingham

Pig Iron Shipments Still Exceed Output and Market Remains at $22

BIRMINGHAM, June 1.—Deliveries of pig iron, principally on contracts, are still slightly heavier than production in Alabama. Small-lot buying is not light, but in the absence of increases in surplus stocks on furnace yards, the market is considered strong. Fourteen blast furnaces are still making foundry iron, and prices remain unchanged at $22 per ton, base Birmingham, on foundry iron, with no intimation that a reduction is contemplated. The larger consumers are operating well, and the melt of jobbing foundries has increased slightly. However, companies which do not ordinarily buy in the larger tonnages are limiting their purchases to needs for a fortnight or so ahead. While inquiries for pig iron continue to appear, they generally represent an effort to bring out lower prices.

We quote per gross ton, f.o.b. Birmingham district furnaces, as follows:

No. 2 foundry, 1.75 to 2.25 sil.	$22.00
No. 1 foundry, 2.25 to 2.75 sil.	22.50
Basic	22.00
Charcoal, warm blast	$30.00 to 32.00

Rolled Steel.—The last half of the past month saw a change in conditions in the steel market, and an encouraging number of orders were booked against inquiries which had been pending for several weeks. The plants of the United States Steel Corporation in the Birmingham district closed the past month with little change in unfilled tonnage. Moreover, its plant operations are still active and shipments heavy. Small fabricating shops in this territory are booking numerous small contracts.

Coke.—Sales have declined, but all by-product coke ovens of the district are in operation and independent producers are accumulating no stock. Spot coke is selling at as high as $6.50 per ton, Birmingham, with $6

the more usual price. Contract coke is to be had at $5.50, if contracts cover considerable tonnage and call for extended deliveries. Local requirements in coke are sustained, and few outside contracts, not including those placed here during the anthracite strike, have been cancelled.

Old Material.—Very little new buying is being done in this territory but, as has been the case for some time, much old material is being shipped against old obligations. Prices are weak. Heavy melting steel is quoted at $13, but the larger consumers apparently are well supplied with the product.

We quote per gross ton, f.o.b. Birmingham district yards, as follows:

Cast iron borings, chemical	$15.00 to $16.00
Heavy melting steel	13.00 to 14.00
Railroad wrought	12.00 to 13.00
Steel axles	18.00 to 19.00
Iron axles	18.00 to 19.00
Steel rails	18.00 to 18.50
No. 1 cast	17.00 to 17.50
Tramcar wheels	17.00 to 17.50
Car wheels	16.00 to 16.50
Stove plate	14.00 to 14.50
Machine shop turnings	8.00 to 8.50
Cast iron borings	8.00 to 9.00
Rails for rolling	15.00 to 16.00

St. Louis

Advances in Steel Prices Fail to Stimulate Buying—Pig Iron Dull

ST. LOUIS, June 1.—The pig iron market has never been quite so dull as now. Total sales for the week were not more than 300 tons, consisting entirely of carload lots. The only important inquiry pending is for 500 to 1000 tons of foundry iron from a western Missouri melter for third quarter shipment. Melters generally are showing no interest in the future, and will place only the smallest possible orders until their own order files become a little thicker. The market is weak. While prices are nominally unchanged, quotations mean little when business is in sight.

We quote delivered consumers' yards, St. Louis, as follows, having added to furnace prices, $2.16 freight from Chicago, $4.42 from Birmingham, all rail, and 81c. average switching charge from Granite City:

Northern fdy., sil. 1.75 to 2.25	$22.66 to $23.16
Northern malleable, sil. 1.75 to 2.25	22.66 to 23.16
Basic	23.16 to 24.16
Southern fdy., sil. 1.75 to 2.25	24.92 to 26.42
Granite City iron, sil. 1.75 to 2.25	23.31 to 23.81

Coke.—Some good-sized contracts for foundry coke for shipment during the next 12 months have been made, notably one for 2000 tons, but there is only a fair demand for prompt shipment. Demand for domestic coke has fallen off considerably as a result of warmer weather.

Finished Iron and Steel.—The advance in prices on bars, as established by the mills, has been received with little comment by the trade here, which showed little interest in getting in before the advance became effective. Warehouse business is fairly good. Fabricators of structural steel report a dearth of large projects. A 1000-ton award to the Mississippi Valley Structural Steel Co. for a St. Louis Car Co. building was the largest in some time. Reinforcing bar projects are also scarce. The largest, 500 to 600 tons for foundations for the St. Louis waterworks, previously reported, is still pending. A few small outside jobs were let, each requiring less than 100 tons. Railroad inquiries are negligible.

Old Material.—Two consumers of old material have come into the market for round tonnages. An East Side user bought about 3500 tons of busheling, borings and turnings at from 50c. to 75c. under the prevailing quotations of last week, dividing the order among four St. Louis dealers. A radiator manufacturer bought 3500 tons of stove plate, which was distributed among three St. Louis and one Chicago dealer. No other business worth reporting was transacted. Dealers continue to buy most sparingly except to cover contracts. New railroad lists include: Pennsylvania Railroad, 44,000 tons; Chicago, Milwaukee & St. Paul, 10,000 tons; Chicago, Burlington & Quincy, 6100 tons; Missouri Pacific, 5100 tons; Big Four, 4000 tons; Union Pacific, 3500 tons; St. Louis-San Francisco, 600 tons; Missouri-Kansas-Texas, 500 tons.

We quote dealers' prices f.o.b. consumers' works, St. Louis industrial district and dealers' yards, as follows:

Per Gross Ton	
Iron rails	$11.00 to $11.50
Rails for rolling	14.75 to 15.00
Steel rails less than 3 ft.	15.50 to 16.00
Relaying rails, 60 lb. and under	24.00 to 25.00
Relaying rails, 70 lb. and over	30.00 to 31.00
Cast iron car wheels	15.50 to 16.00
Heavy melting steel	12.00 to 12.50
Heavy shoveling steel	12.00 to 12.50
Frogs, switches and guards cut apart	13.50 to 14.00
Railroad springs	16.00 to 16.50
Heavy axle and tire turnings	8.50 to 9.00
No. 1 locomotive tires	16.00 to 16.50
Per Net Ton	
Steel angle bars	$11.50 to $12.00
Steel car axles	16.75 to 17.25
Iron car axles	20.50 to 21.00
Wrought iron bars and transoms	17.75 to 18.25
No. 1 railroad wrought	10.00 to 10.50
No. 2 railroad wrought	11.00 to 11.25
Cast iron borings	8.50 to 9.00
No. 1 busheling	9.25 to 9.75
No. 1 railroad cast	10.00 to 10.50
No. 1 machinery cast	16.50 to 17.00
Railroad malleable	13.00 to 13.50
Machine shop turnings	5.75 to 6.25
Bundled sheets	6.50 to 7.00

Warehouse Prices, f.o.b. St. Louis

	Base per Lb.
Plates and structural shapes	3.25c.
Bars, mild steel or iron	3.15c.
Cold-finished rounds, shafting and screw stock	3.75c.
No. 28 black sheets	4.60c.
No. 10 blue annealed sheets	3.60c.
No. 28 galvanized sheets	5.70c.
Black corrugated sheets	4.65c.
Galvanized corrugated sheets	5.75c.
Structural rivets	3.65c.
Boiler rivets	3.85c.
	Per Cent Off List
Tank rivets, ⅞-in. and smaller	70
Machine bolts	50 and 5
Carriage bolts	47½
Lag screws	55 and 5
Hot-pressed nuts, square, blank or tapped	3.25c. off per lb.
Hot-pressed nuts, hexagons, blank or tapped	3.75c. off per lb.

Canadian Production of Iron and Steel Products Shows Gain in 1925

TORONTO, ONT., June 1.—The output of iron and steel and their products in Canada during the year 1925 had a total value of $374,434,934, which compares with $370,088,674 for the year 1924, according to a preliminary report issued by the Dominion Bureau of Statistics, Ottawa.

Sales of pig iron, steel ingots, steel castings and rolled iron and steel products totaled $37,884,411, an increase of $4,300,000 over the corresponding figure for 1924; sheet metal products had a value of $4,000,000 more than in the year 1924; automobile production increased $22,400,000 to a value of $110,835,380, and the production of 161,970 cars was the highest on record for the industry. The agricultural implement group maintained the same level of production as in 1924. There was a general reduction in the output from plants producing railroad rolling stock; not including repairs, production was valued at $23,482,383, or $22,000,000 below the figures for 1924.

Imports into Canada of iron and steel and their products during the calendar year 1925 were valued at $166,573,076, as compared with $137,979,471 in 1924. Of this total 86 per cent came from the United States and 11 per cent from the United Kingdom. Exports totaled $69,354,468, of which 11.3 per cent went to the United Kingdom, 9.7 per cent to the United States, and 79 per cent to other countries. Automobiles and parts, at $39,417,614, made up 57 per cent of Canadian exports of iron, steel and their products.

Boston

Price Reduction Fails to Stimulate Pig Iron Sales—Foundry Coke Lower

BOSTON, June 1.—Pig iron sales are small and usually the result of solicitation by brokers. Bona fide open inquiries are scarce. Sales the past week were confined largely to Indian, New York State and Southern irons. The official announcement of a cut of $1 a ton in Buffalo iron has failed so far to stimulate business. Indian iron has been sold at around $23 a ton, on dock here, duty paid. Eastern New York State iron has been sold on a delivered basis equal to or slightly under delivered prices on Buffalo iron, while Southern metal has commanded premiums over Northern irons. The failure of large melters to show interest in iron is attributed to previous purchases of liberal tonnages of distress iron, both in foreign and domestic brands. Small foundries have insufficient forward business on their books to warrant further purchases of iron before the middle of the month, at least. Late last week the Mystic Iron Works received its second lot of raw material, 9500 tons of pyrites from Bona, Algeria, making a total of 18,700 tons of ore on its docks.

We quote delivered prices on the basis of the latest sales as follows, having added $3.65 freight from eastern Pennsylvania, $4.91 from Buffalo, $5.92 from Virginia, and $9.60 from Alabama:

East. Penn., sil. 1.75 to 2.25	$25.15 to $25.65
East. Penn., sil. 2.25 to 2.75	25.65 to 26.15
Buffalo, sil. 1.75 to 2.25	24.91
Buffalo, sil. 2.25 to 2.75	25.41
Virginia, sil. 1.75 to 2.25	27.92 to 29.92
Virginia, sil. 2.25 to 2.75	28.42 to 30.42
Alabama, sil. 1.75 to 2.25	28.91 to 31.60
Alabama, sil. 2.25 to 2.75	29.41 to 32.10

Shapes and Plates.—Fabricators booked few orders the past week calling for more than 100 tons, but there is a considerable tonnage pending, most of which will be closed this month. A Massachusetts legislative committee has acted favorably on a proposed suspension bridge between Boston proper and East Boston. Should this job mature it will be the largest bridge in New England and will require many thousand tons of steel. Shapes and plates are firm at 1.90c. per lb., base Pittsburgh. Demand for both products is satisfactory.

Coke.—Effective June 1, both the Providence Gas Co. and the New England Coal & Coke Co. reduced their prices on by-product foundry coke 50c. a ton to $12, delivered within a $3.10 freight rate zone. The price is now $1 a ton less than it was during the recent coal strike. These companies have opened their books for last-half contracts. The demand for foundry coke is fair. Deliveries in May against first-half contracts ran slightly under those for April.

Cast Iron Pipe.—Taunton, Mass., has awarded 650 tons of 8-in. and 12-in. pipe to the United States Cast Iron Pipe & Foundry Co. This was the only open inquiry to be closed the past week. Private business has been fairly active, however. Aggregate bookings of this character totaled more than 3000 tons, most of it being from municipalities, with deliveries extending over several months. Domestic pipe prices are strong. Those quoted openly are: 4-in., $60.10 a ton, delivered common Boston freight rate points; 6-in. to 12-in., $55.10 to $56.10; larger pipe, $54.10 to $55.10. The usual $5 differential is asked on Class A and gas pipe.

Old Material.—New business is limited in most cases to stray cars of heavy melting steel, turnings, forged scrap and skeleton, while prices remain unsettled. The practice of offering less for long bundles of skeleton than for short is, perhaps, more common than heretofore. Short bundles usually range from $8.50 to $9 a ton, on cars, whereas long ones bring 50c. a ton less. Heavy melting steel apparently is pegged at $10 to $10.50, on cars, but most sellers are reluctant to let go on that basis. Those brokers who a week ago could pay $9 for machine shop turnings have dropped their offers to $8.50, which now represents the extreme top price available. Material recently sold by the Boston & Maine Railroad and the Watertown Arsenal, Watertown, Mass., failed to bring better prices than those quoted below.

The following prices are for gross-ton lots delivered consuming points:

Textile cast	$18.50 to $19.00
No. 1 machinery cast	16.50 to 17.00
No. 2 machinery cast	14.50 to 15.00
Stove plate	13.00 to 13.50
Railroad malleable	19.00 to 19.50

The following prices are offered per gross-ton lots, f.o.b. Boston rate shipping points:

No. 1 heavy melting steel	$10.00 to $10.50
No. 1 railroad wrought	12.00 to 12.50
No. 1 yard wrought	12.00 to 12.50
Wrought pipe (1 in. in diameter, over 2 ft. long)	9.50 to 10.50
Machine shop turnings	8.00 to 8.50
Cast iron borings, chemical	10.00 to 10.50
Cast iron borings, rolling mill	8.00 to 8.50
Blast furnace borings and turnings	8.00 to 8.50
Forged scrap	8.25 to 8.75
Bundled skeleton, long	8.00 to 8.50
Forged flashings	9.00 to 9.50
Bundled cotton ties, long	8.25 to 8.50
Bundled cotton ties, short	8.50 to 9.00
Shafting	15.00 to 15.50
Street car axles	15.00 to 15.50
Rails for rerolling	11.50 to 12.00
Scrap rails	10.00 to 10.50

Warehouse Prices, f.o.b. Boston

	Base per Lb.
Soft steel bars and small shapes	3.265c.
Flats, hot rolled	4.15c.
Reinforcing bars	3.265c. to 3.54c.
Iron bars—	
Refined	3.265c.
Best refined	4.60c.
Wayne	5.50c.
Norway, rounds	6.60c.
Norway, squares and flats	7.10c.
Structural shapes—	
Angles and beams	3.365c.
Tees	3.365c.
Zees	3.465c.
Plates	3.365c.
Spring steel—	
Open-hearth	5.00c. to 10.00c.
Crucible	12.00c.
Tire steel	4.50c. to 4.75c.
Bands	4.015c. to 5.00c.
Hoop steel	5.50c. to 6.00c.
Cold-rolled steel—	
Rounds and hexagons	3.95c.
Squares and flats	4.45c.
Toe calk steel	6.00c.

Buffalo

Basic Pig Iron Declines $1—Sheet Demand Improves

BUFFALO, June 1.—Last week's drop in pig iron prices has not yet brought out any startling increase in demand. Outside of an inquiry for 5880 tons put out by the General Electric Co., there has been no new business of large size offered. The General Electric Co. inquiry is for 1600 tons of foundry and 1400 tons of malleable iron for its Erie, Pa., plant, and approximately 2880 tons for its Eastern plants. An idea of the amount of iron being sold may be gained from the sales report of one producer, which so far this month shows only 1500 tons booked. Bookings in the main consist of carload lots and orders ranging from 100 to 300 tons. In sympathy with the foundry grades, basic pig iron has declined to $19, Buffalo furnace. The Hanna Furnace Co. has put one of its two active stacks out of blast.

We quote prices per gross ton, f.o.b. Buffalo, as follows:

No. 2 plain fdy., sil. 1.75 to 2.25	$20.00
No. 2X foundry, sil. 2.25 to 2.75	20.50
No. 1X foundry, sil. 2.75 to 3.25	21.50
Malleable, sil. up to 2.25	20.00
Basic	19.00
Lake Superior charcoal	29.28

Finished Iron and Steel.—One very encouraging feature of the market is the optimistic viewpoint of sheet makers. One mill reports specifications coming in at an increased rate, with inquiries heavier both individually and in the aggregate. Some sizable inquiries for automobile sheets have been received. Most of the business is being placed for the third quarter, and mills are looking forward to three or four months of very good operations. Local sheet mills are now operating at 70 per cent of capacity. Bars are firm at

2.265c., Buffalo, and shapes and plates remain at 2.165c., Buffalo. Reinforcing bar business is being offered in good volume.

Old Material.—The list has weakened somewhat during the week. The only purchaser is one that does not use a selected No. 1 heavy melting steel and is acquiring small tonnages at $14.50 to $14.75 per gross ton. The market is being flooded with hydraulic compressed sheets and drop forge flashings from Detroit. Lists from the Pennsylvania, Erie and New York Central railroads are due to close early in the week, the list from the Pennsylvania being exceptionally large. Dealers are having difficulty filling recent orders of heavy melting steel, hydraulic compressed sheets and No. 1 busheling at figures which permit a profit.

We quote prices per gross ton, f.o.b. Buffalo, as follows:

Heavy melting steel	$14.50 to $14.75
Selected No. 1 heavy melting steel	15.50 to 15.75
Low phosphorus	17.50 to 18.00
No. 1 railroad wrought	14.00 to 14.50
Car wheels	17.00 to 17.50
Machine shop turnings	10.00 to 10.50
Mixed borings and turnings	11.50 to 12.00
Cast iron borings	11.50 to 12.00
No. 1 busheling	14.50 to 14.75
Stove plate	14.00 to 14.50
Grate bars	13.00 to 13.50
Hand-bundled sheets	10.00 to 10.50
Hydraulic compressed	14.50 to 14.75
No. 1 machinery cast	16.00 to 16.25
Railroad malleable	16.50 to 17.00
Iron axles	24.00 to 25.00
Steel axles	16.00 to 16.50
Drop forge flashings	12.75 to 13.25

Cincinnati

Another 50c. Decline in Foundry Iron—Advance in Bars Stimulates Buying

CINCINNATI, June 1.—A further recession of 50c. a ton in foundry iron from the Ironton district has brought out a price of $19, base furnace, although some sales still are being made at $19.50. It is reported, but not confirmed, that quotations as low as $19, base furnace, on No. 2X have appeared in isolated cases. The break in the southern Ohio market is attributed principally to the efforts of a Cleveland company to secure business in this territory by selling foundry iron at as low as $18, base Cleveland. Rather than permit the major portion of the available tonnage to go to this Lake furnace, Ironton producers decided to lower their schedule in competitive territory. While sales in the past week have been light, considerable inquiry has developed. The Swain Robinson Co., Richmond, Ind., is in the market for 2000 tons of foundry for last half delivery, and the American Foundry & Machine Co., Hamilton, Ohio, is asking for 1000 tons. Despite the fact that Alabama iron is firm at $22, base Birmingham, a price which practically makes it prohibitive in this territory, small lots have been taken by melters nearby. Tennessee iron is quoted nominally at $20.50, base Birmingham. Consumers of Jackson County silvery iron are manifesting little interest, but quotations are steady. Local dealers look for considerable pig iron buying in the next two weeks.

Based on freight rates of $3.69 from Birmingham and $1.89 from Ironton, we quote f.o.b. Cincinnati:

Alabama fdy., sil. 1.75 to 2.25 (base)	$25.69
Alabama fdy., sil. 2.25 to 2.75	26.19
Tennessee fdy., sil. 1.75 to 2.25	24.19
Southern Ohio silvery, 8 per cent	30.39
So. Ohio fdy., sil. 1.75 to 2.25	$20.89 to 21.39
So. Ohio malleable	20.89 to 21.39

Finished Material.—In specifications and orders the past week was the best in several months. The increased bookings, together with the advance of $2 a ton in the price of bars, have strengthened the position of producers, who are optimistic about the outlook for the next 60 days. While consumers still are reluctant to contract for future requirements, they are not holding out so strenuously for the lowest possible quotation before placing their orders. There has been an upward trend in the demand for structural plates and shapes, with one seller reporting sales in the past month approximately 30 per cent ahead of those in April. For most producers, however, business in the aggregate in May was about equal to that in the previous month. The only sign of weakness is in sheets. It is understood that black sheets have been offered at 3.10c., base Pittsburgh, although 3.15c. to 3.25c. better represents the market. A mill nearby has announced a reduction of $1 a ton on automobile body sheets to 4.20c., Pittsburgh. Galvanized sheets are bringing 4.40c. to 4.50c., base Pittsburgh, and blue annealed sheets are quoted at 2.40c., base Pittsburgh. Bars have been moderately active. They range from 2c. to 2.10c., base Pittsburgh, with the latter price prevailing on lots under 100 tons. Several buyers have attempted to secure concessions on tank plates, but mills have held steadfastly to 1.90c., base Pittsburgh. Structural shapes are selling at 1.90c., base Pittsburgh. In wire goods there has been a marked increase both in specifications and orders. Jobbers in Southern territory are beginning to contract for their fall requirements in fencing and allied products. Common wire nails are quoted at $2.65 per keg, Pittsburgh or Ironton, and plain wire at $2.50 per 100 lb. Pittsburgh or Ironton. Fabricators have expanded their operations somewhat in the past two weeks.

Warehouse Prices, f.o.b. Buffalo

	Base per Lb.
Plates and structural shapes	3.40c.
Mild steel bars	3.30c.
Cold-finished shapes	4.45c.
Rounds	3.95c.
No. 28 black sheets	4.60c.
No. 10 blue annealed sheets	3.90c.
No. 28 galvanized sheets	5.75c.
Common wire nails, base per keg	$3.90
Black wire, base per 100 lb	3.90

Warehouse Prices, f.o.b. Cincinnati

Plates and structural shapes	3.40c.
Bars, mild steel or iron	3.30c.
Reinforcing bars	3.30c.
Hoops	4.00c. to 4.25c.
Bands	3.95c.
Cold-finished rounds and hexagons	3.85c.
Squares	4.35c.
Open-hearth spring steel	4.75c. to 5.00c.
No. 28 black sheets	4.10c. to 4.30c.
No. 10 blue annealed sheets	3.60c.
No. 28 galvanized sheets	5.25c. to 5.40c.
Structural rivets	3.75c.
Small rivets	65 per cent off list
No. 9 annealed wire, per 100 lb.	$3.00
Common wire nails, base per keg	2.95
Cement coated nails, base per 100-lb. keg	3.15
Chain, per 100 lb.	7.55
	Net per 100 Ft.
Lap welded steel boiler tubes, 2-in.	$18.00
4-in.	38.00
Seamless steel boiler tubes, 2-in.	19.00
4-in.	39.00

Reinforcing Bars.—With awards confined to small tonnages and with no fresh projects of consequence before the trade, the market is quiet. New billet bars are quoted nominally at 2c., Cleveland, and rail steel bars at 1.90c., mill.

Warehouse Business.—A substantial increase in sales, which extended into all commodities, stimulated local activity in the past week. The improvement, however, was not great enough to bring the total volume of business in May up to that of the previous month. Prices are firm.

Coke.—Although the leading seller of by-product foundry coke has announced the continuation throughout June of the present price of $10.14, delivered Cincinnati, another producer is openly soliciting business at $7.50, ovens, or $9.64, delivered here. However, domestic by-product coke has remained firm, with egg and walnut selling at $7.14, delivered, and No. 2 nut at $6.64. In Detroit territory producers have advanced domestic grades 25c. a ton to $7.25, f.o.b. Detroit ovens. Shipments of by-product foundry in the past month equaled those in April, but the movement of domestic grades fell off 25 per cent. An increase in the sales of New River and Wise County beehive coke is reported. The price of Wise County furnace coke has stiffened and now is $3.50 to $4, ovens.

Based on freight rates of $2.14 from Ashland, Ky., $3.53 from Connellsville, and $2.59 from Wise County ovens and New River ovens, we quote f.o.b. Cincinnati: Connellsville foundry, $7.53 to $9.53; Wise County foundry, $6.84 to $7.59; New River foundry, $9.59 to $10.09; by-product foundry, $9.64 to $10.14.

Old Material.—The market remains weak. Many mills are holding up shipments temporarily and foundries are buying sparingly. Quotations are the same as a week ago. The Big Four railroad has a list closing today which totals 4500 tons, including 1750 tons of heavy melting steel and 1000 tons of No. 3 steel rails.

We quote dealers' buying prices, f.o.b. cars, Cincinnati:

Per Gross Ton	
Heavy melting steel	$11.00 to $11.50
Scrap rails for melting	11.50 to 12.00
Short rails	16.50 to 17.00
Relaying rails	27.00 to 27.50
Rails for rolling	13.00 to 13.50
Old car wheels	12.50 to 13.00
No. 1 locomotive tires	16.50 to 17.00
Railroad malleable	15.00 to 15.50
Agricultural malleable	13.50 to 14.00
Loose sheet clippings	6.50 to 7.00
Champion bundled sheets	8.50 to 9.00
Per Net Ton	
Cast iron borings	6.50 to 7.00
Machine shop turnings	6.00 to 6.50
No. 1 machinery cast	17.00 to 18.00
No. 1 railroad cast	13.50 to 14.00
Iron axles	20.00 to 20.50
No. 1 railroad wrought	8.50 to 9.00
Pipes and flues	7.00 to 7.50
No. 1 busheling	8.50 to 9.00
Mixed busheling	6.50 to 7.00
Burnt cast	6.50 to 7.00
Stove plate	8.50 to 9.00
Brake shoes	9.00 to 9.50

Toronto

Large Supply of Scrap Fails to Find Market

TORONTO, ONT., June 1.—The Canadian iron and steel scrap market is stagnant. Mills are showing practically no interest in the market and refuse to place orders unless at a decided advantage. Foundries are buying in small tonnages for immediate needs and those that have placed contracts are taking regular shipments on this account. The demand for scrap as a whole, however, is below that of a year ago, despite steady improvement in the steel industry of Canada since the beginning of this year. In the Montreal district the demand for scrap on domestic consumption account is dull, but some interest has recently developed in exports. The limited resale demand for old material is reflected in purchases by dealers. Large quantities of scrap are available throughout the country, but holders are having difficulty in finding buyers. Canadian dealers' buying prices are as follows:

	Toronto	Montreal
Per Gross Ton		
Steel turnings	$10.00	$6.50
Machine shop turnings	9.50	6.50
Wrought pipe	7.00	6.00
Rails	11.00	8.50
No. 1 wrought scrap	11.00	13.00
Heavy melting steel	10.50	8.00
Steel axles	16.00	17.00
Axles, wrought iron	18.00	19.00
Per Net Ton		
Standard car wheels	16.00	16.00
Malleable scrap	13.00	12.00
Stove plate	11.00	12.00
No. 1 machinery cast	16.00	17.00

Detroit Scrap Market Depressed

DETROIT, June 1.—Holdups by several mills in Ohio have had a further depressing effect on the scrap market in this district. Machine shop turnings registered a new low range of $6.75 to $7.25. The automobile industry is producing at a good rate with most plants having reduced their winter inventory during the past 45 days. This will work to the advantage of suppliers of castings and parts in the future.

The following prices are quoted on a gross ton basis f.o.b. producers' yards, excepting stove plate, No. 1 machinery cast and automobile cast, which are quoted on a net ton basis:

Heavy melting and shoveling steel	$13.00 to $13.50
Borings and short turnings	8.50 to 9.00
Long turnings	6.75 to 7.25
No. 1 machinery cast	17.00 to 18.00
Automobile cast	21.50 to 22.50
Hydraulic compressed	10.00 to 10.50
Stove plate	13.50 to 14.50
No. 1 busheling	11.00 to 11.50
Sheet clippings	7.00 to 7.50
Flashings	10.00 to 10.50

To Eliminate Burdensome Overhead in World Trade

There is a growing conviction in the United States and throughout the world that much burdensome overhead expense due to obstacles and impediments to foreign trade, particularly those of the *nuisance* type, can be eliminated.

The American Manufacturers Export Association, 233 Broadway, New York, is conducting an inquiry among American manufacturers, traders and importers, asking for specific instances of obstacles to world trade which they consider unnecessary. The combined information and suggestions of American exporters and importers will be used by the American committee in preparing the American case for presentation to the central international committee of the International Chamber of Commerce.

How Business Men Can Help

This important subject is one requiring the firm backing of all American concerns interested in world trade, whether members of the association or not. The association therefore invites and urges all American manufacturers to submit to it full and complete data on specific difficulties and obstacles they have encountered in their international trade, especially:

1. Unreasonable or discriminating customs regulations or tariffs.
2. Arbitrary import and export prohibitions.
3. Unreasonable consular fees and procedure.
4. Tax discriminations and legal barriers.
5. Governmental and private monopolies.
6. Patents and trade marks.

Strike of Molders in Cincinnati

CINCINNATI, June 1.—Local members of the Iron Molders' Union of North America failed to report for work this morning. They are taking a "vacation," following the refusal of the executive board of the union to sanction a strike. The men are demanding $8 a day, the present scale being $7. Their employers have refused to grant the increase. The tieup affects approximately 35 per cent of the foundries in this city.

Baldwin Locomotive Works Buys Control of Midvale Co.

The Baldwin Locomotive Works, Philadelphia, has purchased a controlling interest in the Midvale Co., Philadelphia, manufacturer of heavy forgings, locomotive tires and other forged products. The stock was bought for cash, largely in the open market. Samuel M. Vauclain, president Baldwin Locomotive Works, informed THE IRON AGE that no change in the management of the Midvale Co. is contemplated.

The Midvale Co. was organized at the time of the purchase of the Midvale Steel & Ordnance Co.'s properties by the Bethlehem Steel Co., and Alva C. Dinkey, formerly president of the Midvale Steel & Ordnance Co., became president of the Midvale Co. The capital stock of the Midvale Co. consists of 200,000 shares of no par value, which have had a market range roughly from $20 to $25 per share.

To Train Foundry Apprentices

The project to institute a training school in Los Angeles for the development of apprentices in the foundry industry, which has been tentatively considered for some time, seems destined to an early consummation. J. C. Beswick of the State board of education had a recent conference with William S. Kienholz, vocational director for the Los Angeles board of education, and representative foundrymen of Los Angeles.

It was decided to go ahead with the proposed school and the working out of a definite plan was left to Mr. Kienholz. He will make a survey of several leading foundries in the industrial district.

NON-FERROUS METAL MARKETS

The Week's Prices

Cents per Pound for Early Delivery

	May 26	May 27	May 28	May 29	June 1
Lake copper, New York	14.00	14.00	14.00	14.00	14.00
Electrolytic copper, N. Y.*	13.57½	13.57½	13.57½	13.57½	13.57½
Straits, tin, spot, New York	61.00	61.00	61.00	....	60.62½
Lead, New York	7.65	7.65	7.65	7.65	7.65
Lead, St. Louis	7.45	7.45	7.45	7.45	7.45
Zinc, New York	7.17½	7.17½	7.25	7.25	7.30
Zinc, St. Louis	6.82½	6.82½	6.90	6.90	6.95

*Refinery quotation; delivered price ¼c. higher.

NEW YORK, June 1.—The markets have all been very quiet and featureless the past week. Demand has been light for each metal and there has been almost no change in prices except a slight advance in zinc. Practically no business was done from Saturday to Monday, inclusive, on account of the holiday.

Copper.—The history of the week just passed has been a repetition of the previous one. There has been almost no buying and what little there was has been satisfied at an average of 13.82½c., delivered, or at a range of 13.80c. to 13.85c. Some producers are still asking 13.87½c., but getting very little business. Consumers generally seem to be well covered. There was a little better inquiry today, particularly for export, on which bids were made at 13.70c., f.a.s. Lake copper is quoted largely nominal at 14c., delivered.

Copper Averages.—The average price of Lake copper for the month of May, based on daily quotations in THE IRON AGE, was 14c., delivered. The average price of electrolytic copper was 13.60c., refinery, or 13.85c., delivered.

Tin.—Although the week has been a rather quiet one, particularly because of the holidays, including those in London a week ago, a respectable business was done, estimated at 1200 tons, up to and including Friday, May 29. Dealers and consumers were buyers with July-August delivery the principal position involved. There were also purchases of some June-July shipment from the East. Spot metal was unobtainable on the last two days, the nearest available metal being ex-steamer at dock. Statistics for May, which will be available late today or tomorrow, are expected to show an increase in the total visible supply as of June 1. Spot Straits tin today was quoted at 60.62½c., New York. London prices today were about £2 per ton less than a week ago, with spot standard quoted at £266, future standard at £264 10s. and spot Straits at £274. The Singapore price today was £270 10s. Arrivals up to and including May 28 were 6070 tons, with 5920 tons reported afloat.

Lead.—Evidently the leading interest is taking most of the business offered in the East at its unchanged contract price of 7.65c., New York. A few other sales, mostly carload lots, are noted in this territory at 7.80c., New York, for spot delivery. The St. Louis price in the outside market is 7.45c. The market is quiet and independent producers are pretty well booked, particularly for June.

Zinc.—Late last week the market became firmer, partly because of the probability of higher ore prices and slightly better demand from consumers. Prime Western zinc was quoted Friday at 6.90c., St. Louis, or 8.25c., New York, the highest in several weeks. Today the market is a little stronger at 6.95c., St. Louis, with prospects of 7c., in the near future.

Nickel.—Ingot nickel in wholesale lots is quoted at 35c. with shot nickel at 36c. and electrolytic nickel at 39c. per lb.

Antimony.—The market is quiet and practically unchanged with Chinese metal quoted at 9.50c., New York, duty paid, for early delivery. Some spot metal sold recently at 10c., New York.

Aluminum.—Virgin metal, 98 to 99 per cent pure, is obtainable as ingots at 27c. to 28c. per lb., delivered.

CHICAGO, June 1.—This market as a whole is steady and the demand for all commodities is fair. Prices of

Metals from New York Warehouse

Delivered Prices per Lb.

Tin, Straits pig	62.00c. to 62.25c.
Tin, bar	65.50c. to 66.00c.
Copper, Lake	15.25c.
Copper, electrolytic	15.00c.
Copper, casting	14.75c.
Zinc, slab	7.75c. to 8.25c.
Lead, American pig	8.50c. to 9.00c.
Lead, bar	11.00c. to 12.00c.
Antimony, Asiatic	12.00c. to 13.00c.
Aluminum, No. 1 ingot for remelting (guaranteed over 99 per cent pure)	30.00c. to 30.50c.
Babbitt metal, commercial grade	30.00c. to 35.00c.
Solder, ½ and ½ guaranteed	41.00c.

Metals from Cleveland Warehouse

Delivered Prices per Lb.

Tin, Straits pig	66.50c.
Tin, bar	69.50c.
Copper, Lake	15.00c.
Copper, electrolytic	15.00c.
Copper, casting	14.00c.
Zinc, slab	8.50c.
Lead, American pig	8.50c. to 9.00c.
Antimony, Asiatic	18.50c.
Lead, bar	11.00c.
Babbitt metal, medium grade	21.50c.
Babbitt metal, high grade	70.50c.
Solder, 50-50	39.75c.

Rolled Metals from New York or Cleveland Warehouse

Delivered Prices, Base per Lb.

Sheets—	
High brass	18⅞c. to 19⅞c.
Copper, hot rolled	22½c. to 23½c.
Copper, cold rolled, 14 oz. and heavier	24¾c. to 25¾c.
Seamless Tubes—	
Brass	23½c. to 24½c.
Copper	24¼c. to 25¼c.
Brazed Brass Tubes	26¾c. to 27¾c.
Brass Rods	16⅝c. to 17⅝c.

From New York Warehouse

Delivered Prices, Base per Lb.

Zinc sheets (No. 9), casks	12.75c.
Zinc sheets, open	13.25c.

Non-Ferrous Rolled Products

Mill prices in brass, bronze and copper products are unchanged. Zinc and lead sheets were reduced about May 1, zinc sheets ½c. per lb. to 11.25c. and lead full sheets ¼c. to 11.50c. No changes have been made since.

List Prices Per Lb. f.o.b. Mill

On Copper and Brass Products, Freight Up to 75c. Per 100 Lb. Allowed on Shipments of 500 Lb. or Over.

Sheets—	
High brass	18.87½c.
Copper, hot rolled	22.50c.
Zinc	11.25c.
Lead (full sheets)	11.50c.
Seamless Tubes—	
High brass	23.50c.
Copper	24.25c.
Rods—	
High brass	16.62½c.
Naval brass	19.37½c.
Wire—	
Copper	15.75c.
High brass	19.37½c.
Copper in Rolls	21.37½c.
Brazed Brass Tubing	26.87½c.

Aluminum Products in Ton Lots

The carload freight rate is allowed to destinations east of the Mississippi River and also allowed to St. Louis on shipments to destinations west of that river.

Sheets, 0 to 10 gage, 3 to 30 in. wide	37.50c.
Tubes, base	48.00c.
Machine rods	34.00c.

Rolled Metals, f.o.b. Chicago Warehouse

	Base per Lb.
Sheets—	
High brass	18⅞c. to 19⅞c.
Copper, hot rolled	22½c.
Copper, cold rolled, 14 oz. and heavier	24¾c.
Zinc	12.00c.
Lead, wide	11.08c.
Seamless Tubes—	
Brass	23½c. to 25c.
Copper	24¼c. to 25¾c.
Brazed Brass Tubes	26⅞c. to 29⅛c.
Brass Rods	16⅝c.

copper, tin, lead and zinc are unchanged while antimony is off, due to comparatively ample stocks and a slackening in demand. Old metal prices are steady and the market is quiet. We quote, in carload lots, Lake copper, 14.12½c.; tin, 62.50c.; lead, 7.55c.; zinc, 6.90c.; in less than carload lots, antimony, 11.50c. On old metals we quote copper wire, crucible shapes and copper clips, 10.50c.; copper bottoms, 9.50c.; red brass, 9.25c.; yellow brass, 8c.; lead pipe, 6.75c.; zinc, 5c.; pewter, No. 1, 36c.; tin foil, 43.50c.; block tin, 52c. aluminum, 18c. all being dealers' prices for less than carload lots.

Virginia Pig Iron Association Asks for Freight Rate Adjustment

WASHINGTON, June 1.—Arbitrary rate increases, blanket percentage increases, zoning and grouping have practically stamped the Virginia pig iron industry out of existence, according to a complaint filed with the Interstate Commerce Commission by the Virginia Pig Iron Association, which protested against rates from Virginia blast furnaces to points in Central Freight Association territory. The association some time ago made a similar complaint with regard to rates from its constituent furnaces to Northern and Eastern points.

The complaint states that the Virginia furnaces were first considered as Southern furnaces and their rates were adjusted on that basis, but that later rate advances applied on the basis of Eastern conditions. The contention is made that the furnaces have not been accorded the advantages of their location either in the Southern or the Eastern group but are suffering from the disadvantages of both.

The complaint points out that pig iron production by Virginia furnaces decreased from 299,160 tons in 1913 to 75,733 tons in 1924. Approximately $25,000,000 invested in furnace properties, it is declared, has been made practically worthless. The complaint asks for a thorough and complete investigation of rates incident to the manufacture and distribution of pig iron in relation to the condition of that industry in Virginia. It also requests an adjustment of rates which will give Virginia furnaces the benefit of their location.

Permanent Tariff Commission Favored

Tariff rates will be put into the hands of a permanent flexible Tariff, or Tariff Adjustment, Board, if recommendations of the Chamber of Commerce of the United States go into effect. The idea would be to have the present Tariff Commission serve solely as a research body. The new board would fix rates and its decisions would have the effect of law. This change is recommended after a vote of the membership of more than 1400 national and local business organizations. In its statement on the subject the chamber says:

> We are not in favor of multiplying the number of Government boards. But we are in favor of separating bodies with quasi-judicial functions from purely research organizations and from official bodies making official recommendations as to policy. We believe in a separation of functions, especially in connection with quasi-judicial functions bearing directly on commerce.

Old Metals, Per Lb., New York

The buying prices represent what large dealers are paying for miscellaneous lots from the smaller accumulators, and the selling prices are those charged consumers after the metal has been properly prepared for their uses.

	Dealers' Buying Prices	Dealers' Selling Prices
Copper, heavy crucible	11.75c.	13.25c.
Copper, heavy and wire	11.25c.	12.25c.
Copper, light and bottoms	9.50c.	10.75c.
Brass, heavy	7.00c.	8.75c.
Brass, light	6.25c.	7.75c.
Heavy machine composition	8.75c.	10.00c.
No. 1 yellow brass turnings	8.25c.	9.00c.
No. 1 red brass or composition turnings	8.00c.	9.00c.
Lead, heavy	6.50c.	7.00c.
Lead, tea	4.75c.	5.75c.
Zinc	4.00c.	4.75c.
Sheet aluminum	17.00c.	19.00c.
Cast aluminum	17.00c.	19.00c.

FOUNDRY COSTS

Study of Fundamentals to Be Undertaken in Los Angeles

Such a large majority of the Los Angeles foundries subscribed to the fund for putting the cost instruction course across that the project was definitely started on May 15. Out of approximately 60 institutions which it was hoped might become interested, 47 had signed up and several more had indicated their intention to sign.

The course will be under the direction of John E. Hax, who has had 20 years of experience in studying foundry overhead and is said to be competent to place the industry upon a profitable basis. Recently he has completed successfully a similar course among the foundries in San Francisco.

How the Course Will Be Given

It is not the plan to hold classes of instruction, but Mr. Hax will visit each foundry in turn, will investigate its working conditions, its facilities and its accounting system, if any. After studying the individual problem he will make such suggestions as he thinks will result in converting its operations from the old-haphazard method into one which will insure profitable operation.

No attempt will be made to effect a uniform scale of prices. All he will attempt to do will be to introduce a uniform method of estimating costs, to introduce an effective system of accounting and to attempt to show each individual foundryman how he can operate his plant, whatever his facilities may be, profitably for himself without derangement to the industry as a whole.

Steel Barrel Output High

Production of steel barrels during April amounted to 602,058, according to Department of Commerce figures from 31 establishments. While this is below the 622,949 of March, it is, with that exception, the highest figure for any month in more than two years. Shipments ran 1 per cent ahead of production. Stocks on hand at the end of the month were 44,411. Unfilled orders at 1,279,159 showed a considerable falling off from the 1,645,066 on March 31. About one-third of the unfilled orders called for delivery within 30 days.

Capacity was used during April to the extent of 53.4 per cent, according to figures of the Steel Barrel Manufacturers Institute, Cleveland. This represented 23.8 per cent of capacity for I. C. C. barrels and 60.6 per cent of capacity for light barrels. The volume of business in April, of the members of the Institute, aggregated $1,449,992. Their shipments amounted to 449,126 barrels, or 74 per cent of the total reported by the Department of Commerce. All of these shipments were for domestic use, no export shipments being recorded. New Jersey took about one-fourth the total. New York was second and Pennsylvania third, these three States accounting for more than half of all shipments.

PERSONAL

S. E. Hackett, vice-president in charge of sales Jones & Laughlin Steel Corporation, Pittsburgh, recently elected a director of the American Iron and Steel Institute, probably owes no small part of the success which has marked his guidance of the sales activities of his company to the fact that for 17 years he was engaged in a purchasing capacity with one of the country's largest steel distributing houses. He was identified with Joseph T. Ryerson & Son, Inc., Chicago, from 1899 until July 1, 1916, and over much of that time was manager of purchases. Severing that connection he became manager of the Chicago warehouse Jones & Laughlin Steel Co., Jan. 1, 1919, he was transferred to Pittsburgh and made general manager of sales. He was elected a director of the company in 1922 and, with the reorganization of Jan. 1, 1924, and the change in name from the Jones & Laughlin Steel Co. to the Jones & Laughlin Steel Corporation, he was elected vice-president.

S. E. HACKETT

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H. E. Gilmore has been made manager of the St. Louis branch Timken Roller Bearing Service & Sales Co., Canton, Ohio. Mr. Gilmore has had several years' sales experience with this company under the direction of Frank J. Lemper, manager and district supervisor of the Chicago branch.

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G. W. Curtis, industrial equipment engineer Timken Roller Bearings Co., Canton, Ohio, has been appointed district manager of sales, industrial division, for the Milwaukee territory. Mr. Curtis will work with R. W. Ballentine, who previously has handled this territory. S. M. Weckstein, who has been notably successful in developing Timken bearing application for precision work in machine tools and high-speed applications, succeeds Mr. Curtis as industrial equipment engineer. G. W. Richards and A. R. Spicacci are appointed assistant industrial equipment engineers to assist Mr. Weckstein.

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F. K. Bennett, consultant on mill operations for the Tata Iron & Steel Co. in India, is spending six months in the United States, most of the time at Steelton, Pa. He has spent the greater part of the last 12 years in India, going there first in 1914. E. H. Hobson, foreman of the furnaces of the Tata plant, is also sojourning for a few months in the United States.

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L. W. Rolfe has been appointed sales manager Taylor Electric Truck Co., Troy, N. Y., manufacturer of electric railroad car trucks, railroad car springs and springs for heavy vehicles. Mr. Rolfe formerly served in the same capacity with the Simmonds Machine Co., Albany, N. Y.

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Prof. Bradley Stoughton, head of the department of metallurgy, Lehigh University, Bethlehem, Pa., sails for Europe June 5 on the "Chicago." He will study the metallurgical departments of various German, British, French and other universities during a three months' trip.

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William G. Clyde, president Carnegie Steel Co., has been elected a member of the board of trustees of the Carnegie Library, Carnegie Institute and Carnegie Institute of Technology. He succeeds Homer D. Williams, resigned.

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Harold P. Ford has opened offices at 3333 Hunter Boulevard, Seattle, as specialist in the construction field, giving special attention to concrete building work. Mr. Ford is secretary of the American Institute of Mining Engineers, Seattle branch.

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R. F. Shaw, sales representative Kearney & Trecker Corporation, Milwaukee, who has been making his headquarters in Grand Rapids, Mich., has been transferred to the Chicago office. He will continue to have charge of the western Michigan territory and, in addition, a portion of the city of Chicago and northern Illinois.

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Howard Coonley, president Walworth Co., Boston, has returned from Europe.

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Edmund G. Brown, formerly mill superintendent Mazapil Copper Co., has been appointed superintendent General Abrasive Co., Niagara Falls, N. Y.

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Dr. V. N. Krivobok, associate in the bureau of metallurgical research of Carnegie Institute of Technology, has been awarded a grant of $500 by the Iron and Steel Institute (of Great Britain) to assist him in carrying out a photomicroscopic study of recrystallization of metals after cold-working. Public announcement of the award, which comes from the Carnegie Research Fund of the Iron and Steel Institute, was made at the annual meeting of the Institute in London, on May 6 and 7. Dr. Krivobok has been a member of the staff of the bureau of metallurgical research since its organization by President Thomas S. Baker two years ago.

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John Leyshon, manager of the Tin Plate Co. of India, Ltd., is at present in the United States on a six months' leave of absence. He is spending a part of the time at Farrell, Pa.

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Edward L. Benedict, named as manager of sales of the National Steel Fabric Co., subsidiary of the Pittsburgh Steel Co., in the reorganization of the sales personnel of the latter company noted in these columns last week, was one of the founders of the former company. It was organized in 1919 as a sales company and had the exclusive sale of welded wire reinforcement manufactured by the Pittsburgh Steel Co. On April 1, 1921, the Steel Fabric company was acquired by the Pittsburgh Steel Co. and Mr. Benedict remained as sales manager. In 1925 he was elected vice-president of the company, which since 1920 has established 12 branch offices in various parts of the country and has eight warehouses.

E. L. BENEDICT

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H. Allen Faust, 915 City Center Building, Philadelphia, who has been covering Pennsylvania, including the Philadelphia district and southern New Jersey, as salesman of brass pipe and tubular plumbing goods for the Bridgeport Brass Co., Bridgeport, has had his territory increased by the addition of Maryland, West Virginia and Washington.

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Lucien J. White has been appointed district manager in San Francisco for Warren Webster & Co., steam heating systems and appliances, Camden, N. J. The branch office is at 55 New Montgomery Street.

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J. E. Moss, R. R. Kitchen, A. C. Whitaker, F. G. Jolliffe and J. R. Moss were elected directors of the

J. E. Moss Iron Works, Wheeling, W. Va., at the annual meeting of the stockholders on May 27. J. R. Moss, the only new member of the board, is a brother of J. E. Moss, president of the company.

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W. H. Perkins, who formerly represented the Trumbull Steel Co. in the New England territory, is back again after a year's absence and in charge of the Boston office at 141 Milk Street.

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Major Robert Bernard Jennings has been appointed general manager Robert W. Hunt & Co., Ltd., Canada, with headquarters at Montreal. Major Jennings was born at Paris, Ont., June 29, 1888. After receiving his education in Humberside Collegiate Institute, Toronto, and University of Toronto, he was engaged in railroad location and construction, and was appointed resident engineer, Canadian Northern Ontario Railway, in 1909. He served in this capacity on the various lines under construction until Jan. 31, 1916, when he enlisted in the Canadian Overseas Expeditionary Force. On his return to Canada, he was appointed division engineer, Toronto division, Canadian National Railways, Toronto. Later he was appointed division engineer Ottawa division, and division engineer, Montreal division. Major Jennings is a member of the Engineering Institute of Canada and the American Railway Engineering Association.

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William C. Simcox resigned, effective June 1, as employment manager of the General Fireproofing Co., Youngstown, to engage in another business enterprise. He was with the company in the above-mentioned capacity for nearly nine years, and during the spring was elected president of the Foremen's Club of the Mahoning Valley.

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E. T. Sproull has resigned his official connection with the Trumbull Steel Co., Warren, Ohio, to engage in business on his own account. He had been connected with the Trumbull company for twelve years, at first as assistant sales manager, then as general sales manager, and latterly as assistant to the president.

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M. W. Alexander, president National Industrial Conference Board, sailed on the Resolute this week for a three months' stay in Europe. He will visit the Scandinavian countries, Germany, Austria, Czechoslovakia, Italy, France and England. Industrial leaders in several of these countries have arranged for conferences with Mr. Alexander to consider means of increasing the purchasing power of European wages by the use of American methods of securing larger and more economical production. Mr. Alexander takes with him a remarkably complete compilation of industrial statistics from the records of the conference board.

OBITUARY

MARTIN F. NEWMAN, manager water purifying department William B. Scaife & Sons Co., Pittsburgh, died May 25 at his home in Oakmont, Pa. Mr. Newman was born in Waynesboro, Pa., and had been connected with the Scaife company for 21 years. He was an active figure in engineering circles and was a member of the Engineers' Society of Western Pennsylvania and of the American Society of Mechanical Engineers.

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WILLIAM H. HALL, president Hall Iron Works, East Lockport, N. Y., died suddenly of heart disease on May 25 in Lockport. He was born in Ithaca, March 3, 1860. His father started the foundry and iron works business, which was continued after his death by the son. Mr. Hall served as fire commissioner from 1913 to 1916.

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COMMANDER STEVENSON TAYLOR, engineer and shipbuilder, died at his home in New York on May 19, at the age of 78. Mr. Taylor was born in New York in 1848 and began his engineering apprenticeship in 1864 with the North River Iron Works of Fletcher, Harrison & Co., now the W. & A. Fletcher Co., Hoboken, N. J. He became consulting engineer for the firm in 1881 and was vice-president and general superintendent from 1883 to 1904, in which year he became vice-president of the Quintard Iron Works, New York, retaining that office for ten years. He had been president of the Webb Institute of Naval Architecture since 1890, was twice president of the Society of Naval Architects and Marine Engineers, president of the Engineers Club of New York and was president American Bureau of Shipping from 1916 until early this year. During the war emergency he was on the Board of Appraisal for Merchant and Private Vessels for the United States Navy, with rank of lieutenant commander. He was appointed by the United States Shipping Board a member of the Board of Surveys and Consulting Engineers to take charge of German steamers. He is survived by two sons and one daughter.

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FRANK E. GOODNOW, electrical engineer for the Public Service Co. of Northern Illinois, Chicago, died May 27. He was 43 years old. He was a member of the Western Society of Engineers and an executive committeeman in the American Institute of Electrical Engineers.

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HENRY FRANCIS LAVINO, secretary E. J. Lavino & Co., ores and alloys, Bullitt Building, Philadelphia, and also secretary Lavino Furnace Co., operating the Lavino blast furnaces, died at Chestnut Hill, Pa., on May 27, at the age of 69. He had been ill for a week with heart disease. Mr. Lavino, who was unmarried, was born in Smyrna, Turkey, the son of a shipper. He was educated in Belgium and came to the United States in his early twenties. He is survived by three brothers, Edward J., president of the two companies, with whom he made his home, Alfred, of Paris, and Octave, of Athens. He was a member of the Manufacturers' and Downtown clubs of Philadelphia.

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JOHN F. LEWIS, formerly superintendent of the Lakeside plant of the Otis Steel Co., Cleveland, died suddenly at Memphis, Tenn., on May 22, at the age of 49 years. Previous to his connection with the Otis company he was assistant superintendent of the Newburgh works of the American Steel & Wire Co. He retired two years ago, after being connected with the Otis company about a year.

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JOHN ERSKINE ADRIANCE, president from 1904 to 1913 of Adriance, Platt & Co., Poughkeepsie, died on May 22 in Poughkeepsie, in his seventy-third year. He was born in New York, the son of John P. Adriance, who founded the Poughkeepsie firm, which manufactured farm machinery. John E. Adriance retired from active business when his company was sold in 1913 to the Moline Plow Co. He was director and trustee of numerous Poughkeepsie banking and other institutions.

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BURTON W. SMITH, since 1900 sales manager in Los Angeles for the United States Steel Products Co., died on May 23, at the age of 54, at his home in Los Angeles. He was born at Haverhill, Mass., a descendant of an old family which settled in New England in 1635. He went to Los Angeles in 1893, and joined the sales force of the Washburn-Moen Mfg. Co. When it was absorbed by the American Steel & Wire Co., in 1900, Mr. Smith became sales manager in the Los Angeles district and shortly afterward he assumed the same position for the United States Steel Products Co. He had been ill since last October.

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RAYMOND P. VANCAMP, president VanCamp Hardware & Iron Co., Indianapolis, died suddenly of heart disease at his home on May 30. He was born in 1874 and was the son of Cortland VanCamp, founder of the company. He had been the head of the company since 1923 and was a director of the National Hardware Association. He was identified prominently with the social and civic life of Indianapolis.

British Mills Gradually Closing

Coal Strike Threatens Complete Paralysis—Imports of Belgian Semi-Finished Stop —Combination of German Mills Effective

(*By Cable*)

LONDON, ENGLAND, May 31.

EXACT figures on furnace operation are not obtainable, but it is estimated that not more than 15 furnaces are now in blast, of which 4 are in Scotland. At the end of April there were 147 active furnaces.

Government rationing of coal is resulting in a rapid paralysis of all industry, and complete suspension of operations before long is certain unless there is a resumption of work by the miners. There is general congestion at furnaces and mills as the aftermath of the general strike and prospects for speedy improvement are very faint. It is believed that all available furnace stocks are needed to fill contracts, so that future business must be taken against new output when coal mining is resumed.

Steel works are meeting present needs out of stocks but are cautious in making sales, wishing to conserve their resources as far as possible. Cleveland pig iron is quiet but firm and higher prices are anticipated when the coal strike is over. Foreign ore is still dull with Bilbao Rubio nominally at 21s. 3d. c.i.f. Tees.

Active demand for stock tin plate has resulted in as high as 20s. 6d. per base box, f.o.b., being paid. Some business for shipment at the earliest possible date after the coal strike has been taken at as much as 19s. 9d. per base box, but most makers are not inclined to accept future orders. Welsh tin plate production has practically stopped. Galvanized sheets are quiet and prices steady. The black sheet market is idle.

Continental markets are stagnant but prices are generally maintained with an upward tendency, a result of increased Belgian costs. On May 1, there were 80 German furnaces in blast. Further curtailment of Westphalian production is considered probable.

German Mills Report No Gain from British Strike

(*By Radio*)

BERLIN, GERMANY, May 31.

The raw steel and pig iron syndicates announce no change in selling conditions for June. The Steel Syndicate is maintaining the 35 per cent reduction in output. The Pig Iron Syndicate has fixed the bounty payable on pig iron sold to manufacturing exporters at 6 m. per metric ton. The pig iron market is dull.

Thus far only French and Belgian mills have gained from the British strike. The market for semi-finished material is improving and French competition is less severe. The market for steel bars is also more active. Sheets are extremely dull. Ingots are quoted at 104 m. ($24.76), blooms at 111 m. ($26.43), small slabs at 124 m. ($29.52), and bars at 134 m. ($31.90).

Solingen steel makers report increasing exports. Numerous orders for electrical and mining equipment are being negotiated with Russia.

GERMAN MERGER COMPLETE

United Steel Works Begins Operation—British Coal Strike Expected to Aid Coal Exports

BERLIN, GERMANY, May 12.—The British general strike had no appreciable effect upon the iron and steel industry of Germany, and but little effect on the coal industry. Should the British coal strike continue for a considerable time, however, the coal mines may benefit materially. The period of the general strike showed no increase in German iron and steel exports, prices were unchanged and alteration of the Raw Steel syndicate's 35 per cent cut in production was apparently not even suggested. Weakening of the franc in international exchange, however, has brought about renewed pessimism among steel producers, who anticipate a return of severe competition from France and Belgium.

The British strike has increased loadings of Ruhr coal and Rhine freight rates have been advanced slightly, but German acquisition of British coal markets in Spain, Italy, Scandinavian countries and South America has not yet been realized, as the 6,000,000 tons of coal stocks at the Ruhr mines consist principally of grades for which there is no export demand, so that the German mines are unable to supply these export markets immedately.

The steel industry as a whole regards the strike as

British and Continental European prices per gross ton, except where otherwise stated, f.o.b. makers' works, with American equivalent figured at $4.86 per £ as follows:

Durham coke, del'd	£0	18½s.				$4.50		
Bilbao Rubio ore†	1	1	to	£1	1¼s.	5.16	to	$5.19
Cleveland No. 1 fdy.	3	15	and	3	15½*	18.22	and	18.35*
Cleveland No. 3 fdy.	3	12½	and	3	13*	17.62	and	17.74*
Cleveland No. 4 fdy.	3	11½	and	3	12*	17.37	and	17.50*
Cleveland No. 4 forge	3	10½	and	3	11*	17.13	and	17.25*
Cleveland basic	3	12½	and	3	13*	17.62	and	17.74*
East Coast mixed	3	17½				18.83		
East Coast hematite	3	16	to	3	16½	18.46	to	18.58
Ferromanganese	15	0				72.90		
*Ferromanganese	14	0				68.04		
Rails, 60 lb. and up	6	15	to	7	5	32.80	to	35.24
Billets	6	0	to	7	10	29.16	to	36.45
Sheet and tin plate bars, Welsh	6	5				30.38		
Tin plates, base box	0	19¾	to	1	0½	4.80	to	4.98
Black sheets, Japanese specifications	13	10	to	14	0	65.60	to	68.04
						C. per Lb.		
Ship plates	7	0	to	7	10	1.52	to	1.62
Boiler plates	9	0	to	11	0	1.95	to	2.39
Tees	7	5	to	7	15	1.57	to	1.68
Channels	6	10	to	7	0	1.41	to	1.51
Beams	6	5	to	6	15	1.35	to	1.46
Round bars, ¾ to 3 in.	7	12½	to	8	2½	1.65	to	1.77
Steel hoops	10	10	and	11	0*	2.28	and	2.39*
Black sheets, 24 gage	10	15	to	11	0	2.33	to	2.39
Galv. sheets, 24 gage	15	10	to	15	15	3.36	to	3.41
Cold rolled steel strip, 20 gage	18	0				3.91		

*Export price.
†Ex-ship, Tees, nominal.

Continental Prices, All F. O. B. Channel Ports

Foundry pig iron: (a)								
Belgium	£3	7s.				$16.28		
France	3	7				16.28		
Luxemburg	3	7				16.28		
Basic pig iron: (a)								
Belgium	2	18				14.09		
France	2	18				14.09		
Luxemburg	2	18				14.09		
Coke	0	18				4.37		
Billets:								
Belgium	4	5	to	£4	7s.	20.65	to	$21.14
France	4	5	to	4	7	20.65	to	21.14
Merchant bars:						C. per Lb.		
Belgium	4	16	to	5	0	1.05	to	1.08
Luxemburg	4	16	to	5	0	1.05	to	1.08
France	4	16	to	5	0	1.05	to	1.08
Joists (beams):								
Belgium	4	14	to	4	15	1.03	to	1.04
Luxemburg	4	14	to	4	15	1.03	to	1.04
France	4	14	to	4	15	1.03	to	1.04
Angles:								
Belgium	5	2	to	5	4	1.12	to	1.15
⅛-in. plates:								
Belgium	5	17	to	6	1	1.29	to	1.33
Germany	5	17	to	6	1	1.29	to	1.33
¼-in. ship plates:								
Belgium	5	5	to	5	10	1.15	to	1.21
Luxemburg	5	5	to	5	10	1.15	to	1.21
Sheets, heavy:								
Belgium	6	3	to	6	4	1.35	to	1.37
Germany	6	3	to	6	4	1.35	to	1.37

(a) Nominal.

merely a new obstacle to the greatly desired international agreement of steel producers. In the meantime, no further meeting of representatives of mills interested in the European Rail Makers Association has been held. The Ruhr trade press claims that various reports of the percentage quotas of Germany, England, France and other countries in the rail syndicate are only estimates by outsiders. Steel consumers in Germany are increasing their complaints that the tariff on steel is too high and claim that should an international syndicate be formed the present duties on steel would be intolerable.

The Vereinigte Stahlwerke A. G., United Steel Works Mfg. Co., has finally been formed from the original "study" corporation, with a capital of 800,000,000 m., operative April 1. The new corporation takes over the trading organizations of the Rhenish Steel Works, August Thyssen Trading Co. and the Schulte Co., and will handle the selling operations in iron and steel. The coal business of the corporation will be transacted through Raab Karchner & Co. A committee has been appointed to survey the properties of the new organization and recommend the closing of unprofitable works, changes that would aid standardization of products and better distribution of labor. The chairman of the board of directors of the corporation is Dr. Voegler and the president of the board of control is Fritz Stinnes.

Renewal of the agreement between the German-Czechoslovakian Tube Cartel and the French tube manufacturers, which expires June 30, is being negotiated. The present agreement covers only special tubes and efforts to include gas and boiler tubes have thus far been unsuccessful. A satisfactory agreement is hampered by the fact that the French Tube Syndicate controls only the domestic sales of its members.

Prospects for the establishment of a German Wire Cable Syndicate are reported improved. The former price agreement expired last September and present quotations are considered unprofitably low. The proposed syndicate would control all domestic sales and part of the export business of its members.

Efforts are being made to merge several steam boiler manufacturing companies in order to promote greater efficiency of operation by closing down the less profitable shops. Included in the negotiations are the Durrwerke A. G., Ratingen; Walther & Co. of Cologne; Jacques Piedboeuf of Düsseldorf and the Petry-Dereux Co. of Dueren.

The newly formed United Steel Works Mfg. Co. is reported to have concluded sizable contracts for Newfoundland Wabana iron ore at 16s. 6d. to 17s. per metric ton, c.i.f. Rotterdam.

Engineering plants expect an improvement in business when the Franco-German commercial treaty is concluded, as now seems possible, with the resumption of negotiations. The French Government has prepared a new program for German reparations deliveries in kind. Under the new plan Germany would deliver material for the electrification of railroads, "Knorr" brakes for freight trains, water-power equipment, port improvement and canal extension material and other products not directly from the iron and steel industries.

STRIKE AFFECTED BELGIUM

Shipments of Semi-Finished Steel to Britain Suspended—Pig Iron Unaffected by Steel Depression

ANTWERP, BELGIUM, May 15.—The British general strike had a depressing effect on the semi-finished steel market and was probably the cause of the recent weakening of prices for billets, blooms and slabs. Aside from the British strike, consumers and producers in Belgium have but little confidence in the future and view with trepidation the continued depreciation of the franc in international exchange. The few buyers occasionally appearing in the market for small lots of material endeavor to dictate prices which are considered too low by the mills. On occasion, however, they meet with success for certain producers are in need of tonnage and the competition from other steel producing countries of Europe is severe. Luxemburg makers are apparently in a fairly firm position on prices, but French mills are evidently seeking orders at any price and German prices are exceedingly low. Domestic quotations are difficult to determine as they seem to vary with the mill and with the circumstances of the order under consideration. To maintain any semblance of export trade mills are forced to meet the world market prices which tend downward, and despite efforts to increase the domestic market the tendency here also is downward under pressure of buyers.

Pig Iron.—The general depression of business and distinct weakness of prices is not applicable to pig iron. Domestic business is in good volume and available supplies are rapidly absorbed. Prices have been revised upward as a result of the lower value of the franc, the change meeting little or no opposition from consumers. No. 3 phosphoric iron is quoted at 490 to 500 fr. per ton, delivered consumers' works, and about $15.90 per ton, f.o.b. Antwerp, for export. Bessemer hematite iron has been increased to about $16.50 per ton, f.o.b. Antwerp.

Semi-Finished Material.—Attempted readjustment of prices to offset franc depreciation has diminished the small volume of business previously coming into the market from domestic consumers. Foreign business has been seriously although only temporarily affected by the British strike. Billets are quoted at £4 2s. per metric ton ($19.95) and blooms at £3 18s. per metric ton ($18.95) f.o.b. Antwerp.

Finished Material.—Prices show a downward tendency but it is difficult to establish the minimum levels because of the small volume of business being transacted. While the export price on bars is nominally £4 16s. to £4 17s. per metric ton, f.o.b. Antwerp, £4 15s. ($23.10) per ton could readily be obtained on a desirable tonnage. German and French mills are apparently in great need of tonnage and seem willing to make almost any concession to secure orders. This is true of several Belgian mills, which have been seeking tonnage at almost any price. Beams are generally quoted at £4 13s. to £4 14s. per metric ton, showing a slight concession from the previous prices. Domestic prices on beams are on a higher basis to offset the decline in value of the franc, but little or no business seems to have been closed.

British Strike Affected French Semi-Finished Steel—Export Prices Decline with International Competition

PARIS, FRANCE, May 20.—Induced by the continued decline of the franc, caution is the outstanding feature of general business. The recent quiet in the domestic market has given way to moderate activity and as a result many works have been able to secure a substantial backlog of business, sufficient in some instances to carry them through the next two or three months. This has given rise to considerable optimism, for, although export trade has been increasing, the business was being booked at the expense of lower prices, sterling quotations having been tending downward as the franc depreciated. Whatever effect the British general strike had upon the French iron and steel market was evidently adverse. French mills have for some time been actively selling semi-finished and other material to British consumers, but during the fortnight in which the strike was in force, no shipments were made to Britain and no inquiries were received.

Pig Iron.—Producers of phosphoric pig iron met this week to discuss the new situation created by the increase in the price of French and German indemnity coke and the rise in the pound sterling. As a result, the June price was fixed at 460 fr. per ton, f.o.b. works, and 45,000 tons was allocated for delivery at this price to domestic foundries. Should the demand necessitate

additions to this quota, a new price will be set. Medium phosphorus foundry has been fixed at 500 fr. per ton. Hematite iron producers, following a meeting May 19, have advanced forge and foundry iron 50 fr. per ton, and about 45,000 tons was set as the quota for June. Spiegeleisen has been advanced 60 fr. for 10 to 12 per cent and 70 fr. for 18 to 20 per cent.

Semi-Finished Material.—While the British general strike reacted to the disadvantage of mills with British contracts for semi-finished steel, no cancellations are reported. The domestic market on billets, blooms and slabs is quiet and prices are unchanged. Export prices are easier at £3 16s. per metric ton for blooms and £4 3s. to £4 4s. for billets, f.o.b. Antwerp.

Finished Material.—As in other markets, domestic prices show a tendency to rise, with an active demand for certain sizes, while export prices show weakness. Reinforcing bars for domestic consumers have been advanced and delayed deliveries are being quoted on bars and structural shapes. Export prices have declined to as low as £4 15s. to £4 16s. per metric ton, f.o.b. Antwerp, for bars.

Wire Rods.—Wire rods continue firm with domestic quotations about 770 fr. per metric ton, f.o.b. works, for large lots. This is apparently the minimum on domestic sales. In some instances small lots have gone at as high as 850 fr. per ton, f.o.b. works. Wire and nails are fairly active and prices are rising.

Evolution in American Industry

(*Concluded from page* 1579)

erly brought objection from the United States Government as a principle that is wrong both in economics and in politics and out of which no good can come.

Menace of Organized Minorities

Still another factor affecting the economic environment of industry is the increasing tendency of organized minorities to force through certain of their programs upon the rest of the community which, because of its lack of organization, finds itself incapable of coping with the situation. In the early days of our national life we were confronted with the issue of State rights versus Federal rights; but at heart this conflict of interest presented no serious problems, since in each of the conflicting ideas the public well-being was the dominant consideration.

The present conflict, however, centers about interested and well-organized groups operating under the threat of political sabotage and having only their own selfish interest at heart. Such organized minorities, whether they be of employers, of wage earners, of farmers, of professional reformers or of other groups, constitute a menace that is subversive of the best interest of a democratic government. Its idea is the dictatorship by a special interest, and thus it is hostile to equitable civic or economic relationships.

High Purchasing Power of the American Wage

Finally, may be noted the greatly improved standard of living in the United States, and the better position of the American people as compared with that of other nations. Not only is the per capita amount of national income higher, but despite our reputation as a wasteful and free-spending people, savings are considerably higher in the United States than in other countries.

Indicative of the relative position of the American wage earner in comparison with the wage earners of other countries may be noted the following figures based on studies by the International Labor Organization at Geneva, Switzerland. These studies show that, if we place the purchasing value of wage earners' incomes relative to the cost of food and shelter in Philadelphia, as typical of the United States, at 100, the position of other countries is: Ottawa (Canada) 83, Sydney (Australia) 77, Copenhagen (Denmark) 72, Oslo (Norway) 58, London 56, Amsterdam (Holland) 49, Stockholm (Sweden) 49, Berlin 40, Prague (Czechoslovakia) 33, Brussels (Belgium) 33, Vienna (Austria) 29, Milan (Italy) 28, Warsaw (Poland) 26, Tallinn (Esthonia) 24.

High-Wage Production Still Competitive

Thus at the beginning of 1926, the American wage earner was, with the exception of the wage earner in Denmark, from 40 per cent to over 75 per cent better off than the average European wage earner. Whereas the orthodox economists have held that the danger to the standard of living of any people came from low-paid workers, American industrial organization has shown that high wages coupled with high productivity and efficient factory organization may result in production of goods at prices capable of meeting the competition of pauper labor. Realization of this fact is bringing European managers to the United States in large numbers to study our methods and organization.

Knowledge of Economic Trend Highly Important

The factors that I have just sketched are part of the changing panorama of our economic environment. The impress which industrial managers make upon industry today will give the industry of tomorrow its tone and its momentum. The conditions of industry will change and keep on changing as industry continues its natural evolution. It is important to know the facts and trend of these conditions. It is even more imporant to know the underlying principles and causes affecting and controlling industrial operation.

The work of the National Industrial Conference Board aims to cover both of these fields. It is not only concerned with the changing facts of day to day evolution, but is concerned just as much with the broader, fundamental characteristics. Its studies afford a clearer understanding of the problems of industry and the direction in which a solution of these problems lies. The last ten years of the board's work have gone far to provide a scientific basis for appraisal of the economic problems of industry. The foundation work has been done; the days of further building lie ahead.

Holiday Curtailment in Mahoning Valley

YOUNGSTOWN, June 1.—Rolling mill operations in the Mahoning Valley were largely suspended over Memorial Day, to permit workers in iron and steel plants a holiday. There was no interruption, however, to the operations in continuous-operating departments, such as blast furnaces, steel plants and by-product coke oven properties.

Independents in this district have followed the lead of the United States Steel Corporation in advancing the price of merchant steel bars $2 per ton, to a 2c. per lb. base. This action was taken despite some irregularity in demand, indicating intention of producers to uphold the market.

A similar case in point is in sheet bars, which are being firmly held at $36 per ton, despite considerable irregularity in sheet steel prices.

Take Short Course in Boxing and Crating

The short course in boxing and crating given May 10-15 at the United States Forest Products Laboratory, at Madison, Wis., was taken by 19 men. One was the thirteenth representative which his firm has sent to take the course, and two others were seventeenth and eighteenth from their firm to attend. The students' tuition fees of $100 each and their expenses for the week are paid by their employers. There were enrollments from S. F. Bowser & Co., Inc., Fort Wayne, Ind.; Mueller Co., Decatur, Ill.; National Lock Co., Rockford, Ill.; New Jersey Zinc Co., Palmerton, Pa.; Sinclair Refining Co., East Chicago, Ind; Stanley Works, New Britain, Conn.; Western Electric Co., and the National Transit Pump & Machine Co., Oil City, Pa.

Machinery Markets and News of the Works

RAILROAD BUYS TOOLS

Boston & Albany Closing on a List of About 25 Machines

May Business About 75 Per Cent of That Booked in April, According to Some Reports

THE Boston & Albany Railroad is placing orders for about 25 large and small machine tools for its shops at West Springfield, Mass. Considerable other railroad business is pending, but orders are being held back in most instances. The Santa Fe has bought seven floor-type grinders and the Union Pacific has closed for several tools. Small inquiries have been given to the Chicago trade by the Chicago & North Western and Chicago & Great Western roads. The Belt Line Railway Co., Chicago, is also seeking a few tools.

An agricultural implement manufacturer bought 10 lathes and two multiple punching machines. A Hartford, Conn., manufacturer ordered eight Lincoln-type milling machines. The International Harvester Co. has placed a few orders for tools for its new tractor plant at Rock Island, Ill. Other purchases within the week have been mostly single machines.

May business in machine tools was about 75 per cent of the volume booked in April, according to some estimates. A good deal of business, pending for some time, is being carried over into June, and this month will be fairly good if any substantial part of this inquiry is converted into orders. Production in some machine tool plants is being scaled down to meet actual orders in hand. Deliveries on some lines are shortening.

New York

NEW YORK, June 1.

MAY business in machine tools in the Eastern district was not quite up to the volume of April, but a fair volume was obtained by some machine tool sellers, while others have felt a rather severe falling off in orders. There has been no buying during the week of outstanding importance, but a fair number of orders for single machines has been placed. The Ingersoll-Rand Co., Phillipsburg, N. J., bought two 6-ft. radial drills and two of the same size were also sold to a Cleveland manufacturer. A Pittsburgh steel company bought a 53-in. tire mold mill. A steel company bought an 800-lb. single-frame steam hammer. Eight Lincoln-type milling machines were ordered by a Hartford manufacturer. Other single-tool orders were a jig borer to a Dayton, Ohio, company, a vertical surface grinder to a Milwaukee manufacturer, a 13-in. geared-head lathe to a calculating machine manufacturer, a 13-in. and a 16-in. geared-head lathe to the Westinghouse Electric & Mfg. Co., East Pittsburgh, a rotary surface grinder to a clock manufacturer, and a production milling mahine to an automobile company in Detroit.

The Brooklyn Bridge Freezing & Cold Storage Co., 4 Vandewater Street, New York, has plans for a three-story addition, 76 x 180 ft. William F. Hemstreet, Woolworth Building, is architect. William Fellowes Morgan is president.

The New York Central Railroad Co., C. S. White, purchasing agent, room 344, 466 Lexington Avenue, New York, is asking bids until June 10 for one 2500-kw. synchronous converter, and three, single phase, 920-kva. air blast transformers, with wiring and accessories, serial contract 10-1926.

James P. Boylan, 120 East Fordham Road, New York, architect, has filed plans for a three-story automobile service, repair and garage building at Sedgwick Avenue and 165th Street, to cost about $85,000 with equipment.

The M. O'Neill Supply Co., 25 Cliff Street, New York, manufacturer of iron pipe, fittings, etc., is having revised plans prepared for a two-story factory, 100 x 400 ft., at 4617-25 Flushing Avenue, Queens, L. I., for which bids will soon be asked on general contract. The Ballinger Co., 100 East Forty-second Street, New York, is architect.

The Electric Welding Co. of America, 744 Court Street, Brooklyn, is said to be in the market for a punch and shear.

Ovens, motors and power equipment, conveying and other machinery will be installed in the three-story plant to be constructed by the New York Pie Baking Co., 82 Sullivan Street, estimated to cost $250,000. C. B. Comstock, 110 West Fortieth Street, is architect.

The Board of Education, Park Avenue and Fifty-ninth Street, New York, plans the installation of manual training equipment in the four-story Theodore Roosevelt High School, Bronx, for which foundations will soon be laid, estimated to cost $2,760,000.

The Department of Public Works, Thomas F. Farrell, commissioner of canals and waterways, Albany, N. Y., is asking bids until June 15 for one steel screw motor tow boat. No bid in excess of $40,000 will be considered. Theodore D. Wells, 11 Broadway, New York, is naval architect.

Murray Klein, 39 Graham Avenue, Brooklyn, architect, has asked bids on a general contract for a two-story automobile service, repair and garage building, 50 x 200 ft., at 561 Park Avenue, Brooklyn, to cost about $85,000 with equipment.

The New York Edison Co., 130 East Fifteenth Street, New York, has taken out a permit for extensions and improvements in its eight-story power substation at 33-43 Gold Street, to cost about $45,000. Ernest M. Van Norden is company engineer.

The Commercial Solvents Corporation, 17 East Forty-second Street, New York, has awarded a general contract to the Stone & Webster Engineering & Construction Corporation, 47 Milk Street, Boston, for a one and two-story addition to its plant at Peoria, Ill., to cost in excess of $1,500,000 with machinery.

Matthew W. Del Guadio, 160 West Forty-fifth Street, New York, architect, has plans for a six-story automobile service, repair and garage building, 78 x 93 ft., to cost approximately $175,000 with equipment.

Fire, May 20, damaged a portion of the machinery and plant of the Advance Battery Corporation, 59 Pearl Street, Brooklyn. An official estimate of loss has not been announced. The damage will be replaced.

The Bracher Co., 225 Main Boulevard, Belleville, N. J., manufacturer of whet stones and abrasive materials, is having plans drawn for a new one-story plant, 40 x 100 ft., to cost about $25,000. W. O. Bartlett, 738 Broad Street, Newark, N. J., is architect. It is understood that the Bracher organization will operate in the future as Karl Bracher, Inc., recently organized by Karl Bracher and associates with a capital of $40,000.

The Club Aluminum Co., 105 West Twentieth Street, New York, manufacturer of cast aluminum kitchen ware, with main plant at Chicago, has leased the three-story building at 101-3 Arlington Street, Newark, totaling about 6000 sq. ft. of floor space, for a new branch plant. The company is also establishing branch works at Baltimore. William A. Burdette is president, and Albert W. Clutter, treasurer.

The Board of Education, City Hall, Newark, R. D. Argue, secretary, is asking bids until June 9 for woodworking machinery, scientific apparatus and supplies, cabinets, etc., for the local schools.

The Battery Equipment Co., 266 Plane Street, Newark, has leased the one-story building at 71-73 South Orange Avenue, totaling about 3500 sq. ft., for a new mechanical service and repair plant.

The Large Metal Stamping Co., 24 Scott Street, Newark, is retiring from business and has arranged to dispose of its plant and equipment.

The Wiggy Products Co., Newark, N. J., has purchased a factory at North Fourth Street and Berkeley Avenue, heretofore occupied by the Peerless Broom Co., and will remodel for a new plant to manufacture metal and other advertising signs and specialties.

The Tung-Sol Lamp Works, Eighth Avenue and High Street, Newark, manufacturer of electric lamps, has acquired adjoining property at 111-17 High Street, consisting of three one-story buildings on site 100 x 100 ft., and will occupy for expansion.

The Gulf Oil Corporation, Frick Annex, Pittsburgh, is completing the first unit of a new refinery at Bayonne, N. J., with charging capacity of 10,000 bbl. per day, and will place in service at once. Work will proceed on the installation of a second unit of like size, to be ready for operation during the summer.

The Rapid Addressing Machine Co., 46 West Twenty-third Street, New York, has concluded negotiations for the purchase of property on First Avenue, Roselle, N. J., as a site for a one-story plant, to cost close to $175,000 with machinery.

Philadelphia

PHILADELPHIA, May 31.

CONTRACT has been let by the Keystone Top & Body Co., Packard Building, Philadelphia, Benjamin Barren, head, to Samuel S. Lear, 840 Jackson Street, for a new two-story plant, 60 x 140 ft., to cost approximately $50,000 with equipment. J. E. Fieldstein, Otis Building, is architect.

The Department of Public Works, Bureau of Water, room 216, City Hall, Philadelphia, George H. Biles, director, is asking bids until June 8 for equipment for extensions in municipal water plants, including pumping machinery, piping, etc., for the Torresdale high service station (contract 795); electric pumping and auxiliary machinery for the Queen Lane pumping station (contract 818); and for superstructure of Belmont mechanical filtration plant (contract 801).

The H. W. Butterworth & Sons Co., 2417 East York Street, Philadelphia, manufacturer of textile machinery, has acquired the plant and business of the Klauder-Weldon Dyeing Machine Co., Bethayres, Pa., which has been in receivership for a number of months. The property consists of six buildings on 20-acre site. The new owner will continue operations under the name of the Klauder-Weldon Division of the Butterworth Co., and plans improvements. It is expected to resume production in June.

The Advance Iron & Engineering Works, Philadelphia, has awarded a general contract to Elliott H. Davis, 759 South Clarion Street, for a one-story plant on Gaul Street.

The National Milling & Chemical Co., Harper's Mill Road, Philadelphia, has acquired a five-story factory on Nixon Street, on site 250 x 250 ft., and will use for expansion.

The Soabar Co., 4608 Edmund Street, Philadelphia, manufacturer of price-marking equipment, etc., has plans for a new one-story factory, 100 x 110 ft., to cost close to $65,000. Lockwood, Greene & Co., 100 East Forty-second Street, New York, are architects and engineers.

Fire, May 26, destroyed a portion of the electro-plating works of the Washington Plating Co., Philadelphia, occupying two floors in the building at 43-45 North Third Street.

M. L. Schwartz, 326 North Tenth Street, Philadelphia, manufacturer of lighting equipment, lamps, etc., has awarded a general contract to Alexander Lamb, 812 West Wyoming Street, for an addition to his plant.

In connection with the recent acquisition of the Thomas Devlin Mfg. Co., Third Street and Lehigh Avenue, Philadelphia, S. S. Fretz, Jr., & Co., Twenty-third Street and Sedgley Avenue, manufacturers of steam fitters' and plumbers' equipment and supplies, have taken over the Devlin foundry on West Pearl Street, Burlington, N. J. It is purposed to continue operations as heretofore, with possible later expansion. James T. Riley, manager of the foundry under the former owner, will continue in the same capacity. The Fretz company will also maintain production at its foundry at Boyertown, Pa. Samuel S. Fretz, Jr., is president.

The Herman Z. Cutler Co., Fifth and Arch Streets, Camden, N. J., operating an automobile radiator and sheet metal works, has awarded a general contract to George Maier & Brother, Bridgeton, N. J., for a new one-story branch plant, 140 x 250 ft., at Bridgeton, primarily for radiator manufacture and repairs. Walter L. Custer, Cumberland National Bank Building, Bridgeton, is architect.

The Norristown Borough School Board, Norristown, Pa., Harry W. Atkins, president, has plans under way for a two-story and basement vocational school at Church and Oak Streets, estimated to cost $45,000. E. Lane Crawford, Curran Arcade, is architect.

The Charles Schutte Body Co., Lancaster, Pa., manufacturer of automobile bodies, has acquired the plant and business of the Blue Ribbon Body Co., Bridgeport, Conn. The company will be continued in operation under the name of the Schutte Blue Ribbon Body Co., recently formed by the purchasing company with a capital of $5,000,000. It is purposed to develop the Bridgeport works for quantity manufacture, retaining the Lancaster plant for the production of custom bodies.

Fire, May 21, destroyed a portion of the plant of the Builders' & Manufacturers' Supply Co., St. Marys, Pa., with loss reported at $60,000 including equipment. It is planned to rebuild.

The Lehigh Coal & Navigation Co., Lansford, Pa., is planning the erection of a new foundry to replace an existing plant recently condemned. It is purposed to increase the output. Headquarters are at 437 Chestnut Street, Philadelphia.

New England

BOSTON, May 31.

THE Boston & Albany Railroad is closing on a list of approximately 25 large and small machine tools for its West Springfield, Mass., shop. The business will be divided among eight or more houses and until it is definitely closed, details are withheld. Other sales during the week were of single tools, about 90 per cent new and 10 per cent used. The machine tool trade in general for May was not so good as in April, although some dealers' sales and shipments ran well last month. New inquiries have fallen off and invariably are for single tools, but as a rule they develop into sales quickly. It is generally believed by the local machine tool trade that prices will be higher this summer.

Small tools continue in demand, but May sales will probably fall below those for April.

The Boston Elevated Railway is taking bids for a two-story, 141 x 144 ft. bus garage, office and store rooms at Somerville to cost $250,000. Air compressors, gas heater and centrifugal pumps are needed. A. J. Blackburn, 31 St. James Avenue, Boston, engineer, is in charge of details.

The Lund Foundry Co., South Main Street, Gardner, Mass., has completed plans for a one-story, 50 x 80 ft. foundry to cost approximately $40,000. Chevigney Barthel, 66 Parker Street, is the architect.

Local machine tool interests are bidding on a circulating loop required for the Boston Navy Yard.

Plans have been completed for a silo type coal pocket, 44 x 86 ft., contemplated by A. A. Caffrey, Haverhill Street, Lawrence, Mass., for which hoisting machinery is wanted.

The Florence Stove Co., School Street, Gardner, Mass., has awarded contract for a one-story, 75 x 100 ft., warehouse addition. Chevigney Barthel, Parker Street, is the architect. Conveying machinery is under consideration.

Work will soon start on a one-story, 88 x 170 ft., manufacturing plant on Tremont Street, Everett, Mass., for the Nustone Products Corporation, Union City, New Jersey. A. B. Dore, 10 E. Forty-third Street, New York, is the architect.

The city of Worcester, Mass., will build a two-story, 42 x 42 ft., trade school addition on Grove Street, Walter S. Young is superintendent of schools. L. W. Briggs, 314 Main Street, Worcester, is the architect.

Preliminary plans have been made for a two-story truck sales and service station to cost $175,000, on North Beacon Street, Brighton district, Boston, for the Noyes-Buick Co., 857 Commonwealth Avenue, Boston. Details are in charge of F. A. McSheffrey, the company's engineer.

The Granite City Ice Co., 550 Adams Street, East Milton, Mass., has preliminary plans for the construction of a one-story plant, to cost about $45,000 with equipment.

The New England Transportation Co., Providence, R. I.,

The Crane Market

INQUIRY for electric overhead and locomotive cranes has been rather light in the past week. Stone & Webster are reported considering the purchase of cranes for the Conowingo power project. The bucket handling crane for the New York Edison Co. is reported closed. The Phoenix Utility Co., 71 Broadway, New York, is about to close on a 60-ton, 1-motor overhead crane.

In the Chicago district the Santa Fe Railroad is in the market for a 175-ton overhead crane for its Cleburne, Tex., shops. Stone & Webster, Inc., 38 South Dearborn Street, Chicago, are inquiring for a 5-ton electric crane for Peoria, Ill. The Weirton Steel Co., Weirton, W. Va., is inquiring for 11 10 to 40 ton overhead cranes for its strip mill plant.

Among recent purchases are:

Pennsylvania Railroad, Philadelphia, a total of five 20-ton locomotive cranes, three from one builder and two from another, formal award not yet made.

Camden Lime Co., Camden, N. J., a 12-ton gasoline operated, crawl-tread locomotive crane from the Orton Crane & Shovel Co.

Southern Pacific Co., San Francisco, Cal., a 25-ton locomotive crane from the American Hoist & Derrick Co.

American Radiator Co., Bayonne, N. J., a 10-ton crawl-tread locomotive crane reported purchased from the Link-Belt Co.

Harrison Engineering Corporation, Kansas City, Mo., one 12-ton crawl-tread locomotive crane from the Orton Crane & Shovel Co.

De Laval Steam Turbine Co., Trenton, N. J., a 7-ton crawl-tread locomotive crane from the Orton Crane & Shovel Co.

Central Coal Co., Ninety-ninth Street and East River, New York, a 25-ton locomotive crane from the Orton Crane & Shovel Co.

Berthelet Pipe & Foundry Co., Milwaukee, a 7-ton gasoline, crawl-tread locomotive crane from the Orton Crane & Shovel Co.

United States Steel Products Co., a 10-ton, 3-motor, overhead crane for a galvanizing plant at Valparaiso, Chile, from the Shaw Electric Crane Co.

Weirton Steel Co., Weirton, W. Va., a 5-ton, 56-ft. span grab-bucket crane from the Shaw Electric Crane Co.

The Wickwire Spencer Steel Co., a 150-ton stripper crane and a 5-ton soaking pit crane from the Alliance Machine Co.

operated by the New York, New Haven & Hartford Railroad Co., has acquired property on Kinsley Avenue, 166 x 500 ft., as a site for the construction of a service, repair shop and garage building, to cost more than $160,000 with equipment.

The Citizens' Utilities, Inc., Wallingford, Conn., operating the Wallingford Gas Co., is completing negotiations for the purchase of the plants and system of the Derby Gas & Electric Co., Derby, Conn., for about $7,600,000. Extensions and the installation of additional equipment are planned. The purchasing company is a subsidiary of the Utilities Power & Light Co., Chicago.

S. S. Eisenberg, 46 Cornhill Street, Boston, architect, has asked bids on a general contract for a two-story automobile service, repair and garage building on Forsyth Street, 127 x 193 ft., to cost close to $140,000 including equipment.

The Graybar Electric Co., Inc., is owned by the Western Electric Co., 195 Broadway, New York, and not by the Westinghouse Electric & Mfg. Co., as stated in our issue of May 13. The new building of the Graybar company will be located at Hartford, instead of New Haven, Conn., and will be used for the distribution of electrical supplies.

Buffalo

BUFFALO, May 31.

TENTATIVE plans are being considered by the Willys-Morrow Co., Elmira, N. Y., manufacturer of automobile transmissions and kindred equipment for enlargements, to cost close to $1,500,000 including machinery. C. F. Killinger is president.

The Autocar Co., Ardmore, Pa., manufacturer of motor trucks, has completed arrangements for a new factory branch at 1122-28 Niagara Street, Buffalo, and has removed its service and repair divisions from 951 Niagara Street to this location. Extensions will be made in service, repair and parts departments. The local branch is operated under the name of the Autocar Sales & Service Co.; W. E. Fish, is manager.

The Standard Milling Co., 49 Wall Street, New York, has preliminary plans under way for the construction of a new flour mill at Buffalo, reported to cost close to $2,000,000 with machinery. The Baxter Engineering Co., Ellicott Square Building, Buffalo, is engineer.

The Consolidated Aircraft Corporation, Buffalo, is said to be planning expansion following the receipt of a contract from the Navy Department, Washington, for 16 airplanes for the naval academies at Hampton Roads, Va., and San Diego, Cal., totaling $166,000. The company also secured an order for 40 airplanes for training stations from the Government earlier in the spring.

The Board of Education, Westfield, N. Y., contemplates the installation of manual training equipment in the proposed two-story and basement addition to the high school, estimated to cost $130,000. Oliver R. Johnson, Fenton Building, Jamestown, N. Y., is architect.

The Semet-Solvay Co., Solvay, N. Y., has begun enlargements in its coke plant on the River Road, Buffalo, to increase the output from 1300 to 2700 tons per day. By-products equipment will also be installed. The entire expansion is reported to cost close to $2,000,000.

Burt W. Welch, West Main Street, Batavia, N. Y., is considering the construction of a two-story automobile service, repair and garage building on Russell Place, reported to cost about $60,000 with equipment.

South Atlantic States

BALTIMORE, May 31.

THE Zell Motor Car Co., 11 East Mount Royal Avenue, Baltimore, has authorized plans for a two-story service, repair and headquarters building, 140 x 240 ft., to cost close to $120,000 including equipment. Theodore W. Pietsch, American Building, is architect.

In connection with the proposed rebuilding of its plant, recently destroyed by fire with loss of about $300,000, the Summers Fertilizer Co., Stock Exchange Building, Baltimore, will enlarge the former plant at Clinton Street and Fifth Avenue, Canton section. Overhead cranes, conveying machinery and other equipment will be installed. The new plant is expected to cost more than $350,000.

Fire, May 25, destroyed a portion of the plant of the Phillips Can Co., Cambridge, Md., including box factory on adjoining site, with total loss estimated at $200,000 including machinery. Plans for rebuilding are under consideration.

The Sanford Shale Brick Co., Sanford, N. C., recently organized with capital of $100,000 is considering plans for the construction of new works, reported to cost close to $75,000 with machinery. R. E. Marks, Sanford, heads the company.

The Screven Oil Mill Co., Sylvania, Ga., W. E. Hudmon, president, has been inquiring for a structural steel building of standardized type, 40 ft. wide and from 150 to 200 ft. long.

The Board of District Commissioners, District of Columbia, Washington, is asking bids until June 8 for a quantity of fabricated structural steel posts.

Lewter F. Hobbs, Inc., Twenty-fourth Street and Monticello Avenue, Norfolk, Va., has inquiries out for a combined power punch and shear, Beloit type, No. 54.

The Edisto Public Service Co., Denmark, S. C., is considering plans for a new cold storage and refrigerating plant at Williston, S. C., to cost about $40,000.

The Fidelity Storage Co., 1420 U Street, N. W., Washing, has plans for a two-story and basement automobile service, repair and garage building, 125 x 146 ft., for company motor trucks and cars, estimated to cost $125,000 with equipment.

The Santee River Brick Co., St. Stephens, S. C., has inquiries out for a 4-ton gasoline locomotive, Plymouth type preferred; also for a number of V-shape all-steel dump cars, 36-in. gage, to be used at its clay mining properties.

The Chiquola Mfg. Co., Honea Path, S. C., is said to have plans for the construction of an addition to its steam-operated electric power plant, to cost about $65,000 including equipment.

The Williams-Gable Mfg. Co., Charleston, S. C., recently organized, plans the establishment of a new factory for

the manufacture of screen doors, windows, etc. A list of equipment is being arranged. J. Freeman Williams is president.

The Old Dominion Power Co., Norton, Va., is disposing of a bond issue of $2,500,000, a portion of the proceeds to be used for extensions and improvements in plant and system. Harry Reid is president.

Stevens, Inc., Stevens Pottery, Ga., has work under way on a new refractory plant addition for the manufacture of fire brick, flue lining and kindred products. The equipment installation will provide for an output of about 30,000 fire brick per day. Walter S. Stapler is president.

The Board of Awards, Office of the City Register, City Hall, Baltimore, Howard W. Jackson, president, will receive bids until June 9 for furnishing and installing machinery for various industrial art shops and for tools and mechanical supplies for shops at various city schools. Specifications at the office of the Board of School Commissioners, Madison and Lafayette Avenues.

The Lockhart Power Co., Lockhart, S. C., operated by the Monarch Mills, Inc., with local textile mill, has completed plans for the construction of a one-story steam-operated electric power plant to cost close to $275,000 with machinery. W. D. Dent is general manager.

C. A. Carson, P. O. Box 817, Spencer, N. C., plans the installation of equipment in a local building for the manufacture of window and door screens, insulator pins and kindred products.

The Page Power Co., Luray, Va., is reported to be planning the installation of a hydroelectric power plant to cost about $125,000. Miller A. Roudabush is president and general manager.

The Hackley Morrison Co., 1708 Lewis Street, Richmond, Va., machinery dealer, has inquiries out for a 250-kw. generator, a.c., 3-phase, 60-cycle, 440 volts; also for an engine generator set of like capacity; one 250-hp. horizontal return tubular boiler, to operate at 150 lb. pressure, and one oil expeller, Anderson type.

The Piedmont Furniture Co., Inc., Mt. Airy, N. C., has acquired the local plant of the Inman Chair Co. and plans enlargements for the production of stools, children's chairs, etc. The purchasing company was organized recently by William Sydnor and Edgar Welch, both of Mt. Airy.

The R. S. Armstrong & Brother Co., Atlanta, Ga., machinery dealer, has been inquiring for slip-ring motors, 50 and 60 hp., 60-cycle, 2-phase.

Gulf States

BIRMINGHAM, May 31.

PLANS are under way by the Micolithic Co., 203 Cotton Exchange Building, Houston, Tex., for new works on the Houston ship channel for the manufacture of tile, blocks and other building materials from mineral products secured at its properties at Micolithic, Culberson County, where the material will be mined and crushed, and shipped to the Houston mill. The new plant will cost in excess of $100,000 with machinery.

The Galveston-Houston Electric Co., Galveston, Tex., organized to take over the Brush Electric Co., and other utility properties in this section, is disposing of a note issue of $2,000,000, a portion of the fund to be used for extensions and improvements, including property acquisitions.

The Manchester Terminal Corporation, Post Dispatch Building, Houston, Tex., R. H. Baker, head, has preliminary plans for a new two-story cotton compress plant and warehouse, 250 x 1500 ft., to cost in excess of $1,500,000 with equipment. R. J. Cummins, Bankers' Mortgage Building, is engineer.

The City Council, Seguin, Tex., has preliminary plans for extensions and improvements in the municipal electric light and power plant. Additional machinery will be installed.

The American Smelting & Refining Works, Hord and Freeman Streets, North Dallas, Tex., has acquired property on Powhatan Street, fronting on the line of the Santa Fe Railroad, South Dallas. Present buildings, heretofore occupied by the Southern Fuel Co., will be remodeled for a new plant. The existing works will be removed to the South Dallas site and additional machinery installed.

The Consumers Ice & Cold Storage Co., Orlando, Fla., will erect a new ice-manufacturing and cold storage plant, 62 x 240 ft., to cost approximately $150,000 with machinery. E. H. Lowe is president.

The City Commission, Vernon, Tex., is asking bids until June 8 for one 300-hp. Diesel engine direct-connected to one 300-kva. alternator, 2300-volt, 60-cycle, 3-phase, with belt-driven exciter, switchboard and auxiliary equipment, for installation in the municipal electric power plant. H. D. Hockersmith is mayor, in charge.

The Texas Central Power Co., Frost Building, San Antonio, Tex., is completing plans for the construction of a new ice-manufacturing plant at Sinton, Tex., one-story, 90 x 100 ft., to cost in excess of $75,000 with equipment. A. D. Barron is construction engineer.

The Phoenix Portland Cement Co., Birmingham, will soon begin the construction of a four-story mill at its property at Powderly, Ala., to cost in excess of $100,000 with equipment. A new one-story crusher building will also be erected.

The Engineers Public Service Co., operated by Stone & Webster, Inc., 147 Milk Street, Boston, has acquired the Baton Rouge Electric Co., Baton Rouge, La., and will operate in conjunction with other Southern public utilities lately purchased. Tentative plans are under advisement for extensions and the installation of additional equipment.

W. M. Smith & Co., Birmingham, machinery dealers, have inquiries out for a locomotive crane, 8-wheel type, 15 to 20-ton capacity; also several electric generators, 75 to 250-kw. capacity, direct-connected to steam engines, about 2300 volts, and two crude oil engines, 100 hp. and 50 hp., respectively.

The Miami Supply Co., 200 S. W. First Avenue, Miami, Fla., has awarded a general contract to W. W. Bradford, Miami, for a one-story machine shop. An iron and steel storage and distributing building will also be erected. H. I. Johnson, Miami, is architect.

St. Louis

ST. LOUIS, May 31.

JOSEPH BRECKLEIN, Sixty-third Street and High Drive, Kansas City, Mo., and associates will erect a two-story plant, 25 x 115 ft., at 1605 Locust Street, for the manufacture of industrial chemicals, to cost $35,000 with machinery.

The Terminal Railroad Co., Union Station, St. Louis, is said to have plans under way for new car repair shops, to cost in excess of $50,000 with equipment. H. J. Pfeifer is chief engineer.

The Oklahoma Boiler Works, Inc., Picher, Okla., has begun rebuilding the portion of its plant recently destroyed by fire, consisting of two one-story structures, 55 x 130 ft., and 30 x 130 ft., to cost close to $25,000. John Landreth heads the company.

The Mid-Continent Petroleum Co., Weleetka, Okla., will begin the construction of a new oil refinery to cost approximately $100,000 including machinery.

The Sparkman Hardwood Lumber Co., Sparkman, Ark., is considering the early rebuilding of the portion of its plant destroyed by fire, May 17, with loss estimated at close to $50,000, including equipment and stock.

The Common Council, Altus, Okla., will soon take bids for the installation of a water supply plant, to include steel tank and tower, water-softening equipment and auxiliary apparatus. The complete installation will cost about $650,000. The Benham Engineering Co., Gumbel Building, Kansas City, Mo., is engineer.

The Southwest Utility Ice Co., El Reno, Okla., is disposing of a bond issue of $1,600,000, a portion of the fund to be used for extensions and improvements in ice-manufacturing plants, including additional equipment installation. The company is operating 16 artificial ice plants and 30 ice and cold storage plants.

The Marland Refining Co., Ponca City, Okla., will soon complete plans for a new oil storage and distributing plant, 100 x 280 ft., at Wichita, Kan., to cost about $55,000 with equipment.

The Patterson Steel Co., 801 North Xanthus Street, Tulsa, Okla., has filed plans for a one-story storage and distributing works, 82 x 140 ft., to be equipped with hoisting, conveying and other material-handling machinery.

The Henry W. Cross Co., 122 South Michigan Avenue, Chicago, has authorized the rebuilding of its oil refinery at Smackover, Ark., recently destroyed by fire, with loss estimated in excess of $100,000 with machinery.

The Western Land Roller Co., Hastings, Neb., manufacturer of road machinery, has awarded a general contract to the Edward Green Construction Co., local, for the erection of its one and two-story plant, 120 x 370 ft., estimated to cost $100,000 with equipment. A portion of the structure will be equipped as a foundry. Marcus L. Evans, Brandes Building, is architect.

The Herman Body Co., 1831 South Third Street, St. Louis, manufacturer of automobile bodies, has awarded a general contract to the Murch Brothers Construction Co., Railway

Exchange Building, for its new plant at 4414 Clayton Street, to be one-story, 110 x 200 ft.

The Common Council, Cherokee, Okla., will issue bonds for extensions and improvements in the municipal waterworks and power plant, including the installation of new engine, pumping equipment and auxiliary equipment.

Chicago

CHICAGO, May 31.

THE final week in May brought forth greater activity in the local machine tool trade. Buying shows some improvement, and fresh inquiry is in greater volume. Total sales for May were smaller than those for April, although well ahead of bookings for May, 1925. Inquiry being carried over into June is in such volume that sales in the first part of the month are expected to compare favorably with those of the past few weeks. The tendency of prices is to rise. Three makers of planers announce this week a 10 to 15 per cent advance and several manufacturers of chucks have put their prices up 15 per cent. It is reported that high speed drill makers will advance prices early in June.

The International Harvester Co. has placed a few tools against the list for its new tractor plant at Rock Island, Ill., and the Santa Fe has bought seven double-wheel floor grinders. The Union Pacific is said to be closing this week on several lathes, two large grinders and a planer. The Chicago Great Western is inquiring for two 4-ft. radial drills and the Chicago & North Western is asking for prices on a 40-in. x 40-in. x 10-ft. motor-driven planer, a 5/8-in. x 10-ft. bending roll and a 10-ft. flanging clamp. The Belt Railway Co. of Chicago, is inquiring for a blower, a 22-in. drill press and a 16-in. x 8-ft. lathe.

The Illinois Power & Light Corporation, Merchants' Bank Building, Chicago, will soon proceed with the construction of a new steam-operated electric generating plant at Venice, Ill., to cost in excess of $400,000.

The Coleman Lamp Co., 3617 South Ashland Avenue, Chicago, has purchased the south-west corner of Forty-seventh and St. Louis Streets from the Central Mfg. District Trustees and will erect a $300,000 factory.

The Champion Machinery Co., 37 West Van Buren Street, Chicago, will build a two-story addition to its plant to cost $25,000.

W. F. Waller, 3715 Elston Avenue, Chicago, will build a one-story sheet metal shop, 27 x 80-ft., to cost $7,500. E. A. Klant, 713 Wrightwood Avenue, is architect.

Plans are being prepared by the Niemann Table Co., Seventy-seventh Street and Cottage Grove Avenue, Chicago, for its proposed one and two-story factory, with steam power house, to cost $100,000 with equipment. The Session Engineering Co., 208 South La Salle Street, is engineer.

The B. F. Reynolds Co., 118 West Ohio Street, Chicago, operating a sheet metal works, has leased a portion of the building at 609 North La Salle Street, totaling about 10,000 sq. ft. of floor space, for a new plant. The present works will be removed to this location and expanded.

Fox & Fox, 38 South Dearborn Street, Chicago, architects and engineers, have plans nearing completion for a three-story automobile service, repair and garage building, 95 x 128 ft., to cost $125,000 with equipment. Bids will be asked on a general contract early in June.

The Interstate Power Co., Dubuque, Iowa, operating the Dubuque Electric Co., and other electric light and power utilities, is disposing of a bond issue of $2,700,000 a portion of the proceeds to be used for extensions and improvements in power properties. H. L. Clarke is president.

The Common Council, Dupo, Ill., plans the installation of electrically-operated pumping machinery in connection with a proposed municipal waterworks. The complete project will cost about $125,000. Schwab & Sheppard, Alton, Ill., are engineers.

Bids will soon be asked by the Faribault Woolen Mills, 129 Fourth Street West, Garibault, Minn., for a steam-operated power plant, estimated to cost $50,000 with equipment. Ralph W. Richardson, Zenith Building, St. Paul, Minn., is engineer.

The Evanston Township Board of Education, Evanston, Ill., plans the installation of manual training equipment in its proposed three-story and basement high school at Lincoln and Prairie Streets, to cost $400,000, for which bids will soon be asked on a general contract. Childs & Smith, 720 North Michigan Avenue, Chicago, are architects.

The Southern Colorado Power Co., First and Main Streets, Pueblo, Colo., has plans under way for a new steam-operated electric generating plant, to cost about $300,000 with equipment. W. N. Clark is general manager.

The Strong-Scott Mfg. Co., 413 South Third Street, Minneapolis, Minn., manufacturer of flour mill machinery and other equipment, has asked bids on a general contract for its proposed one and two-story plant, 100 x 500 ft., estimated to cost $175,000 with machinery. Larson & McLaren, Baker Building, are architects. L. W. Strong is president.

The National Furniture Mfg. Co., 1723 West Van Buren Street, Chicago, manufacturer of furniture frames, has leased the four-story and basement factory at 1348-50 West Grand Avenue, totaling 22,000 sq. ft., for the establishment of a plant. The present factory will be removed to the new location and additional equipment provided.

The Roos-Waegelein Co., 3406 North Cicero Street, Chicago, architects, have plans for a one-story automobile service, repair and garage building, 150 x 150 ft., at Oak Park, Ill., estimated to cost $130,000 with equipment.

The Velie Motors Corporation, Moline, Ill., is purchasing equipment for the establishment of a body-building unit at its local plant and purposes to have the new division ready for service in July. The company heretofore has purchased bodies for its cars from other manufacturers, and will eventually provide sufficient capacity at the new unit for all company body requirements. E. McEwen is general manager.

Cincinnati

CINCINNATI, May 31.

MACHINE tool sales in May totaled approximately 75 per cent of those in April. In fact, the majority of local builders state that the past month has been the poorest of the year, while a leading machine tool manufacturer reports that the volume of business was the smallest since February, 1925. There is considerable inquiry pending, but builders find it difficult to close on a satisfactory portion. Opinion of machine tool executives differs considerably as to the outlook for the next three months. Some believe that the market will be quiet until fall, others are confident that June will be productive of a liberal amount of business.

Production locally is confined to actual orders in hand. Consequently, there has been a gradual paring down of plant operations in the past 30 days. Few machines are being made for stock purposes.

An agricultural implement maker bought 10 lathes from a local builder and two Long & Allstatter multiple punching machines. Two automobile companies in the Detroit district each purchased three 17-in. lathes. The American Steel & Wire Co., Cleveland, and the Ingersoll-Rand Co., Philipsburg, N. J., each took two 6-ft. right line radial drills from the Niles-Bement-Pond Co. The National Cash Register Co., Dayton, Ohio, is the buyer of four Pratt & Whitney multiple drills. A Dayton, Ohio, concern bought a jig borer and a Pratt & Whitney shaper. Among other purchases in this territory the past week are the following: Two 27-in. x 27-ft. lathes by the Pittsburgh Plate Glass Co., Pittsburgh; an Acme bolt cutter by the Nashville, Chattanooga & St. Louis Railroad, Chattanooga; a Ransom grinder and a 24-in. motor-driven drill by the New York Central for Oswego, N. Y.; an 18-in. x 10-ft. Morris lathe by the Utica Willowvale Bleaching Co., Chadwick, N. Y., and a Long & Allstatter gate shear by the Carnegie Steel Co. for delivery to its Cleveland warehouse.

Bids will be received by the Board of Education, Columbus, Ohio, until June 14, for the construction of a one-story manual training shop at the Central high school. Howard D. Smith, 270 East State Street, is school architect.

The Department of Public Works and Highways, Columbus, Ohio, S. F. Schlesinger, director, has plans for a two-story automobile service, repair and garage building, 100 x 200 ft., to cost about $100,000.

The Corley Mfg. Co., 1961 William Street, Chattanooga, Tenn., manufacturer of saw mill machinery and supplies, has work in progress on enlargements in its plant, to include the installation of additional machinery. Improvements are also being considered in existing works. A. J. Corley is president.

The Nance Motor Co., Elizabethton, Tenn., has plans for

a two-story service, repair and garage building, 100 x 115 ft., to cost about $60,000 including equipment.

The Common Council, Livingston, Tenn., is considering the installation of pumping machinery in connection with the installation of a municipal waterworks, for which plans are being drawn by V. V. Long & Co., Colcord Building, Oklahoma City, Okla., engineers.

The Green River Chair Co., Livermore, Ky., has inquiries out for a portion of equipment to be installed in a proposed mill for which plans are nearing completion, including transmission equipment, conveying apparatus and auxiliary machinery; also a 225-hp. engine and accessory power equipment. K. J. Meyer is president.

The Gray-Knox Marble Co., Knoxville, Tenn., will proceed with the construction of a new marble-cutting and finishing mill, one-story, 100 x 275 ft., with extension, 90 x 125 ft., for which a general contract recently was let to the W. L. Nicholson Construction Co., 102 West Clinch Street. The complete plant will cost in excess of $250,000 with machinery.

The Dempster Equipment Co., Walnut and Church Streets, Knoxville, Tenn., machinery dealer, has inquiries out for four 36-in. gage saddle tank locomotives and two crawler type steam shovels with revolving booms, to handle buckets about ¾-yd. capacity.

The James Sand & Gravel Co., Paducah, Ky., is reported to be arranging for the operation of a new plant in the vicinity of Johnson City, Tenn., with mechanical loading, conveying and other handling machinery, to cost in excess of $80,000.

The Springfield Aluminum Plate & Castings Co., South Yellow Springs Street, Springfield, Ohio, has plans for a new foundry and machine shop. E. A. Parker is president and general manager.

Detroit

DETROIT, May 31.

CONTRACT has been let by the Sears Paper Co., Lyons and Magra Streets, Saginaw, Mich., to H. G. Christman, South Bend, Ind., for a six-story and basement storage and distributing plant to cost $300,000 with equipment. G. L. & C. W. Rapp, 190 North State Street, Chicago, are architects.

The Stinson Airplane Syndicate, Northville, Mich., recently organized, has taken over the former local factory of the Stimpson Scale Co., totalling about 25,000 sq. ft. of floor space, for a new plant to manufacture aircraft. Edward A. Stinson heads the company.

The American Seating Co., 901 N. W. Broadway, Grand Rapids, Mich., manufacturer of school furniture, etc., has awarded a general contract to the Owen-Ames-Kimball Co., 38 Pearl Street, N. W., for its proposed new local plant, to cost in excess of $2,500,000 with machinery. Smith, Hinchman & Grylls, Marquette Building, Detroit, are architects. H. M. Taliaferro is vice-president.

Officials of the Gotfredson Corporation, 3100 Meldrum Avenue, Detroit, manufacturer of motor trucks, have formed the Gotfredson Truck Corporation, capitalized at $1,500,000, to take over and expand the present organization. The new company is headed by Benjamin and Robert B. Gotfredson.

The Michigan Tag Co., Grand Rapids, Mich., recently reorganized with a capital of $50,000, has authorized the installation of additional equipment for considerable increase in capacity.

The Board of Education, 12541 Second Avenue, Highland Park, Mich., has preliminary plans for a two-story vocational shop addition to the local high school, to cost about $37,000. Marcus R. Burrowes and Frank Eurich, Jr., Architects Building, Detroit, are architects.

Stockholders of the Fisher Body Corporation, Detroit, have approved of the sale of entire properties to the General Motors Corporation, heretofore holding 60 per cent of the stock of the Fisher company. The purchasing company will maintain operations on the present basis at the various plants, with immediate expansion projected in the factories at St. Louis, Janesville, Wis., and Cincinnati. The organization will be known as the Fisher Body Division of the General Motors Corporation. Alfred P. Sloan, Jr., is president of the motor corporation.

The Board of Education, Flint, Mich., J. W. McCue, secretary, is considering the installation of manual training equipment in the proposed addition to the Northern high school, estimated to cost $750,000. Malcolmson & Higginbotham, F. P. Smith Building, Flint, are architects.

The American Enameled Products Co., 2101 Indiana Avenue, Chicago, is said to be planning the early purchase of equipment for its proposed works at Mount Pleasant, Mich., where the former plant of the Transport Truck Co. is being remodeled for early occupancy.

Smith, Moss & Mitschke, Union Trust Building, Detroit, architects, have plans nearing completion for a one and two-story automobile service, repair and garage building on Grand River Avenue, to cost $110,000 with equipment.

The Bay City Electric Steel Casting Co., Bay City, Mich., is said to have negotiations under way for the purchase of property at the eastside waterworks plant of the city, to be used for expansion.

The Stroh Products Co., 909 East Columbia Street, Detroit, has recently rejected bids for a proposed ice-manufacturing and cold storage plant, to cost about $100,000 with equipment, and will have revised plans drawn. It is said that new bids will be asked in the fall. Weston & Elington, Stroh Building, are architects. John W. Stroh is secretary.

Indiana

INDIANAPOLIS, May 31.

PLANS have been authorized by the Kokomo Steel & Wire Co., Kokomo, Ind., for the immediate rebuilding of its nail mill and cooperage shops, destroyed by fire May 24, with loss estimated at $250,000 including machinery. John E. Frederick is general manager.

The Board of Education, 150 North Meridian Street, Indianapolis, will install manual training equipment in the proposed two-story and basement Shortridge high school, estimated to cost $1,000,000. Preliminary plans are being drawn by J. Edwin Kopf & Deery, Indiana Pythian Building, architects.

The Henry Weis Mfg. Co., Atchison, Kan., manufacturer of steel automobile equipment and accessories, is completing the removal of its plant to a new factory at Elkhart, Ind., recently erected, where additional equipment will be provided for considerable increase in capacity. Headquarters will be maintained in the future at Elkhart.

Following a recent bond issue of $10,000,000, the Indianapolis Power & Light Corporation, Indianapolis, has arranged for additional financing and is disposing of a preferred stock issue to total $3,800,000, a considerable part of the proceeds to be used for general expansion, etc. The company was organized to take over the Indianapolis Light & Heat Co. Walter C. Marmon is president.

The Standard Oil Co. of Indiana, 2320 Division Street, Evansville, Ind., will soon ask bids on a general contract for a new one and three-story storage and distributing plant, estimated to cost $190,000 with equipment. Schlinz & Bailey, 53 West Jackson Boulevard, Chicago, are architects.

The State Line Generating Co., Hammond, Ind., operated by Samuel Insull, president Commonwealth Edison Co., 72 West Adams Street, Chicago, and associates, has secured permission to secure advances from associated companies in an amount not exceeding $22,000,000, the fund to be used for a proposed steam-operated electric generating plant on Lake Michigan at Hammond, consisting of five units, each with capacity of 200,000 kw., designed as the largest plant of its kind in the country. Work will soon be placed in progress.

The Indiana Service Corporation, Fort Wayne, Ind., has awarded a general contract to Max Irmscher & Sons, Fort Wayne, for a one-story repair shop to cost $21,000.

The Cleveland Grain & Milling Co., 606 Board of Trade Building, Indianapolis, has plans for the immediate rebuilding of its grain elevator at Beech Grove, near Indianapolis, recently destroyed by fire, with loss of about $250,000 with equipment. The new structure will cost a like sum. James Stewart, Inc., 343 South Dearborn Street, Chicago, has the general contract.

The Cabranette Co., 308 North Michigan Avenue, Chicago, manufacturer of kitchen cabinets, has asked bids on a general contract for a new one-story plant, 90 x 500 ft., at Michigan City, Ind., to cost in excess of $100,000 including equipment.

The Wabash Valley Electric Co., Clinton, Ind., will issue bonds in amount of $325,000, preferred stock for $100,000 and common stock for $100,000, a portion of the fund to be used for extensions and improvements in power plants and system.

Pacific Coast

SAN FRANCISCO, May 26.

CONTRACT has been awarded by the American Radiator Co., San Francisco, to Lindgren & Swinerton, San Francisco, for a two-story factory branch and distributing plant, estimated to cost $100,000 with equipment. R. M. Clark is local manager. Headquarters are at 40 West Fortieth Street, New York.

Garbutt & Walsh, P. O. Box 212, San Pedro Harbor, Los Angeles, have plans for a two-story boat building and

repair shop, 60 x 65 ft., at the Ferry Street Terminal, to cost about $21,000. A traveling crane will be installed.

The Southern California Edison Co., Los Angeles, has applied for permission to issue bonds for $40,000,000, a portion of the fund to be used for extensions and improvements in power plants and system.

The Board of City Trustees, Orange, Cal., plans the installation of a gas engine, two turbine pumping units, motors and auxiliary equipment in connection with extensions and improvements in the municipal water system, for which a bond issue of $125,000 has been approved. W. J. Richardson is water superintendent; J. B. Lippincott, Central Building, Los Angeles, is consulting engineer.

The Kirsch Mfg. Co., Sturgis, Mich., manufacturer of curtain rods, with a branch at 4514 Hollis Street, Oakland, Cal., has preliminary plans for a new one-story factory on site recently acquired at Emeryville, Cal., reported to cost about $50,000 with equipment. It is expected to begin work early in the fall. The engineering department of the company is in charge.

The Pacific States Cast Iron Pipe Co., now being organized by J. R. McWane, head of the McWane Cast Iron Pipe Co., Birmingham, and associates, has tentative plans under way for the construction of a new foundry at Ironton, Utah, to cost more than $250,000 including equipment.

The Board of Education, Los Angeles, will construct a manual training building at the proposed new group high school at Fourth Street and Colfax Avenue, Lankershim, for which bids have been asked on general contract. A fund of $350,000, has been arranged for the school. Myron Hunt, Hibernian Building, is architect.

The California Steel Products Co., 452 Bay Street, San Francisco, has acquired about 2½ acres at Campbell and Twentieth Street, Oakland, Cal., as site for a proposed new plant to manufacture boilers, piping, refrigerating equipment, etc. Plans will be prepared for the initial unit in the near future and work is expected to begin in the fall.

The Washington Water Power Co., Spokane, Wash., has arranged for a bond issue of $5,000,000, a portion of the proceeds to be used for extensions and improvements, including hydroelectric power plant expansion.

The Provo Ice & Cold Storage Co., Provo, Utah, has begun the construction of a two-story and basement cold storage and refrigerating plant, 110 x 115 ft., to cost $45,000. Headlund & Watkins, Dooly Building, Salt Lake City, Utah, are architects.

John Parkinson and Donald B. Parkinson, Title Insurance Building, Los Angeles, architects, have completed plans for a three-story automobile service, repair and garage building, 180 x 220 ft., estimated to cost $285,000 with equipment.

Milwaukee

MILWAUKEE, May 31.

NEW orders booked by Milwaukee machine tool builders during May measure up favorably in comparison with April business, although activity in general was hardly equal. Most regular customers appear to have filled their immediate needs and are awaiting deliveries before making further purchases. Several automobile concerns have placed orders which will require until midsummer or early fall to execute which is keeping plants quite well occupied. There is still a shortage of skilled labor.

The Kearney & Trecker Corporation, 5924 National Avenue, West Allis, Milwaukee, has let contracts for the erection of a third story addition to one of its manufacturing buildings, the general contract having been awarded to A. E. Roeske, 857 Sixty-eighth Avenue.

A. H. Ahrendt, 596 Seventy-fourth Avenue, West Allis, Milwaukee, has placed contracts for the construction of a $40,000 garage and service building, 60 x 134 ft., part two stories and basement.

The Milwaukee Die Casting Co., 295-297 Fourth Street, Milwaukee, is building an addition, 35 x 50 ft., two stories.

The Acme Sheet Metal Works, Milwaukee, has been incorporated with an initial capitalization of $5,000 to engage in the general manufacture of sheet metal products. The principals include Alex C. Sladky, Herman Suhr, and William E. Bogenberger, superintendent of the Consolidated Sheet Metal Works, Milwaukee. Temporary offices are at 440 Kenmore Place.

The Badger Brass Foundry Co., Milwaukee, has been incorporated with a capital stock of $12,000 to conduct a general foundry business. The incorporators are Aloys J. Krause, George Drumi and William N. Leininger, who has been for several years superintendent Superior Foundries, Inc., 709 Kinnickinnic Avenue, specializing in illuminating fixture castings.

The Wisconsin State Board of Control, Madison, has let the general contract to Naset Brothers, Sparta, Wis., at $74,000, for erecting an upper grade vocational school at the State School for Dependent Children at Sparta. The State architect is Arthur Peabody, Madison.

The Waterford, Wis., Village Board closes bids June 8 for one 150 gal. per min. deep well pumping unit. L. E. Garlick is village clerk.

Pittsburgh

PITTSBURGH, May 31.

A LOCAL machine tool dealer reports sales of two punches and shears and a 32-in. slotter, a lathe and two milling machines in the past week, all going to individual buyers. Although orders consist almost entirely of single tools, there is a good deal of satisfaction over the steadiness of the buying.

A fair amount of activity is observed in electrical equipment. The Columbia Steel Co., which a short time ago placed four stands of cold rolls for its wide strip mill at Butler, Pa., with the E. W. Bliss Co., has ordered six 400-hp. a.c. motors from the Allis-Chalmers Mfg. Co. The American Sheet & Tin Plate Co., as the first step in the electrification of its National works, Monessen, Pa., has bought an 1800-hp. a.c. mill drive motor from the Allis-Chalmers company.

Bids have been asked by the Hookless Fastener Co., Meadville, Pa., manufacturer of metal fasteners, etc., for the erection of its two and three-story plant, 50 x 200 ft., and 60 x 300 ft., respectively, to cost in excess of $100,000. Wilbur Watson & Associates, 4614 Prospect Avenue, Cleveland, are architects and engineers.

The American Brakeshoe Co., Pittsburgh, has filed plans for a three-story building at 505 Preble Avenue.

The Pittsburgh Plate Glass Co., Frick Building, Pittsburgh, has acquired the plant and business of the Clarksburg Glass Co., Clarksburg, W. Va., at a trustee's sale, for $100,000 and assumption of deed of trust for $180,000. The new owner will develop the plant as a branch works.

Fire, May 23, destroyed a portion of the refinery, including gasoline distilling works of the Butler County Oil Refining Co., Bruin, Pa., with loss reported at $70,000 including equipment. Plans are under way for early rebuilding.

The Logan Brick & Sand Co., Logan, W. Va., recently organized, has plans under way for new works for the manufacture of waterproof concrete brick and blocks. It is proposed to provide equipment for an initial daily output of 10,000 to 12,000 brick. The company is headed by G. F. Gore and J. F. May, both of Logan.

The LaLance Equipment Co., 745 Third Avenue, Huntington, W. Va., has been making inquiries for an overhead crane, about 2 tons capacity, suitable for handling machinery.

The Pennsylvania Burial Case Co., Reynoldsville, Pa., has preliminary plans under way for an addition, to cost about $30,000 with equipment. W. H. Overdorf, 23 West Long Avenue, DuBois, Pa., is architect.

The Libbey-Owens Sheet Glass Co., Toledo, Ohio, is said to have plans under way for the construction of a new addition to its plant at Kanawha City, W. Va., reported to cost in excess of $75,000, with equipment.

Cleveland

CLEVELAND, May 31.

MACHINE tool sales continue rather slow with few orders for more than single machines. The May volume was somewhat less than in April. Salesmen are developing some business by going into the shops and showing how operating costs can be reduced by substituting more modern for present equipment. The Chevrolet Motor Co., Detroit, is figuring with several manufacturers on additional equipment which it will require for plant extensions, but it may be some time before orders

are placed. Little business is coming from other Michigan automobile plants.

Some activity has developed in steel plant equipment. The Colorado Fuel & Iron Co. has purchased 16 type L No. 10 mechanically operated gas producers from the Wellman-Seaver-Morgan Co., Cleveland, being duplicates of two producers recently placed in operation by the Colorado company. The Wickwire Spencer Steel Co. has purchased two cranes from the Alliance Machine Co., Alliance, Ohio, and soaking pits from Alex Laughlin & Co., Pittsburgh. The soaking pits will replace a horizontal reheating furnace so that larger ingots can be used.

The H. K. Ferguson Co., engineer and builder, Cleveland, has started work on the construction of the first of four factory units for the Nippon Electric Co., at Tokio, Japan, according to announcement of R. E. J. Summers, chief engineer for the firm. The building program contemplates the eventual replacement of all of the old structures of the Nippon company by modern three and four-story structures which have been designed under the direct supervision of Ferguson engineers. The Nippon company is affiliated with the International Standard Electric Co. of New York, and prior to last September had been the Japanese branch of the Western Electric Co. T. H. Mitchell of the Cleveland office of the Ferguson company will go to Japan as construction superintendent, while William Schaltz is to be assigned to the Tokio work as assistant superintendent.

The Domestic Electric Co., 7209 St. Clair Avenue, Cleveland, will erect a two-story and basement factory, 40 x 150 ft. Walther Wefel, 5716 Euclid Avenue, is the architect.

The Westinghouse Electric Products Co., Mansfield, Ohio, a subsidiary of the Westinghouse Electric & Mfg. Co., will take bids shortly for a four-story building providing 125,000 sq. ft. of floor space.

The Herbrand Co., Fremont, Ohio, is contemplating the erection of an addition, but plans probably will not mature for some time.

F. Firman, Deshler, Ohio, has placed contract for a 40 x 80 ft. garage and machine shop.

The Northern Blower Co., West Sixty-fifth Street, Cleveland, has begun the erection of a two-story addition to its plant, 100 x 200 ft., to be used as machine, wood-working and sheet metal departments.

Canada

TORONTO, May 31.

MACHINE tool orders for the month of May compared favorably with those of the previous month. While the greater part of sales were for single tools, with a few lists for as many as a half dozen, the total volume was satisfactory. Inquiries being received include some equipment for new works now under construction and it is expected that many of these will result in good sales within the new few weeks.

Copies of tender forms and specifications have been received by the Department of Commerce, Ottawa, from D. H. Ross, Canadian Trade Commissioner at Melbourne, Australia, dealing with requirements for the Victorian Government Railways, Melbourne. Bids are asked for the supply and delivery of automatic switching equipment; also for one multiple spindle drilling machine, with all necessary equipment, and two capstan lathes, including equipment.

The Page-Hersey Tubes, Ltd., Guelph, Ont., is building an addition to its manufacturing plant to handle increased business.

The Live Wire Co. has purchased the former Guelph Carriage Top Co.'s building at Guelph, Ont., and is remodeling for manufacturing purposes.

George E. Waller, transportation manager of the Dominion Power & Transmission Co., Hamilton, Ont., has confirmed the report that the company will build a $500,000 power station at Hamilton.

Bids will be called soon for an addition to power station and pumping house at Sudbury, Ont. The buildings will cost $15,000 and electrical equipment $19,000. W. J. Ross is clerk.

The Niagara Wire Weaving Co., Niagara Falls, Ont., has instructed Norman Mann, architect, to prepare plans and specifications for an addition to its plant, for which bids will be called in June.

The General Motors Corporation of Canada, Oshawa, Ont., is contemplating a $750,000 addition to its plant.

The Roffmann Rim Corporation, Erie Building, Cleveland, is contemplating building a plant at Kitchener, Ont.

L. O. Taillon, 200 Chambord Street, Montreal, contemplates building an automobile repair shop and is interested in the purchase of lathe, drill press and other machinery.

The Union Oil Co. has decided to build a new and larger plant at Victoria, B. C. H. B. Beasley is local manager.

Plans are being prepared for the City Council, Toronto, for the construction of two high pressure pumping plants, a filtration system, and 9 miles of trunk tunneling, also a 50,000,000 gal. reservoir. The estimated cost of the undertaking is $14,000,000. Commissioner of Works is R. Harris.

Bids have been received by E. Sperling, Cellulose, Ltd., Cumberland, Md., for the erection of a $7,000,000 artificial silk manufacturing plant at Drummondville, Que.

Bids are being received by the Langlois Furniture Co., Cobourg, Ont., for the erection of a brick and steel factory at Hull, Que., to cost $100,000.

Foreign

THE Draeger Shipping Co., Inc., 8-10 Bridge Street, New York, has received a communication from its London, England, office, regarding American electric-operated refrigerating equipment, a local inquiry having been received by the London branch from a company desiring to get in touch with manufacturers.

The State Department, Wurttemberg, Germany, has tentative plans under consideration for the electrification of railroads in this district. Information at the office of the Electrical Equipment Division, Bureau of Foreign and Domestic Commerce, Washington, reference Germany, No. 205563; also at the American Consulate, Stuttgart, Germany, Erik W. Magnuson, vice consul.

The Government of Persia, Teheran, has authorized plans for the construction of a new paper mill for the manufacture of book, writing and other papers, to be operated in conjunction with the Government printing plant, estimated to cost in excess of $400,000 with machinery. Information at the office of the Industrial Machinery Division, Bureau of Foreign and Domestic Commerce, Washington, reference 206728. The American Consulate, Teheran, K. deG. Mac Vitty, consul, also has information regarding the project.

The Manila Electric Corporation, Manila, P. I., is arranging for a stock issue to total $3,960,000, a portion of the proceeds to be used for extensions and improvements in plants and system.

Juan J. Gerardino, P. O. Box 46, Ponce, Porto Rico, electrical dealer, is desirous of getting in contact with American manufacturers or distributors of isolated lighting plants, storage batteries, magnet wire and kindred products.

It has been found that the Miller Brothers Cutlery Co., Meriden, Conn., has assets far in excess of liabilities. Consequently the court has made it plain that the company is not insolvent. A temporary receiver for the company, appointed some time ago, later was made permanent receiver.

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Industrial Notes

All property of the Hunter Crucible Steel Co., Cleveland, has been sold to Henry R. Fishel of Fishel & Marks Co., Cleveland. Mr. Fishel will use the plant as steel storage warehouse for handling shapes, plates, bars and other steel items. The plant is at 6600 Grant Avenue, with direct connection with the Belt Line Railroad. The buildings occupy 50,000 sq. ft., with adequate crane facilities, while there are two outside crane runways with spans of 60 and 80 ft., respectively.

The Columbian Vise & Mfg. Co., Cleveland, has been organized by men who have been affiliated with the Columbian Hardware Co., to take over the manufacturing business of the latter company. The Columbian Hardware Co. will continue its organization, but will confine its activities to the control of real estate holdings, including industrial plants. The Columbian Vise & Mfg. Co. will continue the manufacture of vises and drop forged steel clamps for the automotive industry. Dan. C. Swander, formerly with the Standard Parts Co., Cleveland, and later manager of the spring and bumper plant of the Eaton Axle & Spring Co., Cleveland, has been elected president of the new company. H. F. Seymour is vice-president, A. V. Cannon secretary and H. M. Hitch treasurer. The Columbian company is contemplating moving its plant to new and larger quarters.

A portion of the Bath Iron Works, Bath, Me., recently sold at auction, has been leased for a term of months by the Foundation Co. of New York, which has one of the contracts in connection with the new bridge to be erected in that city. It is reported other firms which will help construct the bridge will take other sections of the Bath Iron Works plant. A corporation has been formed with Frederick W. Pinckley, South Portland, Me., as president to manage the former shipbuilding plant.

Industrial Finances

Stockholders of Reed-Prentice Co., Worcester, Mass., machine tools, at a special meeting approved a reorganization plan. The new company will be known as the Reed-Prentice Corporation, with J. V. Critchley, president, and the retiring board of directors in charge of the management. It will have a capitalization of 39,959 shares of common stock having no par value and 12,489 shares of preferred stock, par $50. Under the reorganization plan each holder of old common stock outstanding has the right to subscribe, on or before July 1, to one share of new stock at $5 per share. Each holder of old preferred stock is to receive one share of new preferred and one share of common and is given the right to subscribe to common stock at $5 a share on or before June 15. The management of the new company reserves the right to purchase 5000 shares or more of common stock at $5 a share. In addition it is to receive as compensation for services 12,500 shares of common stock in three installments extending over a period of three years. The company's current assets and liabilities as of Dec. 31, were as follows:

	1925	1924	1923
Current assets	$1,823,545	$1,201,942	$1,471,191
Current liabilities	135,186	412,585	763,762

Stockholders of the Pacific Strawpaper & Board Co., Longview, Wash., will increase the capital stock from $500,000 to $600,000, the increase to be used in the purchase of more equipment to enlarge capacity. Charles F. Schaub of Longview is president.

The Walworth Co., Boston, reports net sales for the first quarter at $6,922,857, which, with other income, brought the total net up to $7,037,511. The cost of sales, administrative and selling expenses, taxes and other charges, depreciation and interest left a deficit of $161,829 for the first three months. The directors declared a quarterly dividend of 25c. a share on common stock, 20c. less than the previous, and represents a drop from $1.80 to $1 per share annually. President Howard Coonley in making the announcement said: "The purchase of large manufacturing units in the Pittsburgh and Birmingham districts was completed Oct. 16, last. The profit and loss statement for the first quarter of 1926 evidences the costs of such an expansion, without showing its resulting benefits. The period, however, has given opportunity to complete studies that are now making possible the first step toward the economies which were the basis of our development plan. In tonnage, shipments during the first quarter, taken unit for unit, were fully up to the figures of 1925. But the amount realized per ton was below the average of the figures of last year. Volume so far in the second quarter exceeds the first quarter rate, and prospects are better than we anticipated sixty days ago."

THE LAST WORD

(Contributed by the Reader Service Department of the Iron Age Publishing Co.)

HOW is your labor turn-over? If it is below 4.9 per cent* per month, you are doing better than par.

—

Mark Twain's oft-quoted comment about the weather might well be applied to price competition. Everybody is talking about it, but no one seems to be doing anything.

It held the center of the platform at five of the trade association gatherings reported in THE IRON AGE *of last week.*

A banker adds fuel to the fire with the none too cheerful statement that price competition will increase rather than lessen. If you want larger profits, he says, look for them in manufacturing economies, rather than in increased sales effort. Easy to say, but difficult to execute.

This theory is popular with those outside of industry, but it is too general to hold true except in spots.

"Better merchandising" is the answer, says a steel manufacturer. If this simply means knowing your costs, and refusing to sell at a price below cost plus a fair profit, it *is* the answer.

—

The average of IRON AGE *readers who renew their subscriptions is 4.03 out of 5. Incidentally, this is no mean showing, for when you sell a man the first time it may mean merely that you are a good salesman. But when he places a repeat order, he says in effect, "I have tried your product, and I find it satisfactory."*

—

What can you do to meet competition by the trade to which you sell? To elucidate, if you manufacture drop forgings, for example, what can be done if a good customer tells you he plans to install a few hammers and make his own forgings?

The bolt and nut people were confronted with this problem. The railroads, their biggest customers, went into the bolt and nut manufacturing business. Whereupon the bolt and nut association made a careful study of manufacturing costs and demonstrated to the railroads that they were losing money by making instead of buying.

Result: Many of the larger roads are again buying bolts and nuts.

Much can be done by digging out the facts and presenting them properly.

—

One "war baby" that survived the epidemic of 1921 and grew to manhood in ten years is known by the somewhat vague title of "industrial relations." Its older brothers and sisters were never long hale and hearty.

Brought into being by the terrific wartime competition for labor, those skilled in bettering relations between employer and employee have proved that they can earn their salt in peacetimes as well, and have created for themselves a permanent place in industry.

Small as well as large employers of labor have found that the old-fashioned rough-and-ready methods of hiring and firing do not pay. Fitting the right man into the right job and keeping that man satisfied spells low labor turn-over.

*This figure is established by an investigation of the Metropolitan Life Insurance Co. of the labor records of 62 companies for the past seven years.